

# Cancer in Virginia: Overview and Data Tables

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### I. Objectives

Cancer is a major public health issue in Virginia, associated with significant morbidity, mortality, and health care utilization and costs. This report gives an overview of cancer in Virginia. It is data-driven, with the goal to present the latest available cancer incidence, staging, mortality, risk factor, screening, survivorship, and cost data through extensive tables and maps. The report has five areas of focus:

1. Cancer Overview
2. Geographic Variation
3. Racial/Ethnic Disparities
4. Differences in Cancer Risk Factor and Screening Behavior By Socioeconomic Status and Insurance Coverage
5. Cancer Survivorship

### II. Data and Methods

Data were obtained from several sources. Virginia cancer incidence and staging data were obtained primarily from the Virginia Cancer Registry, Virginia cancer mortality data from the Virginia Department of Health Division of Health Statistics, Virginia screening, risk factor, and survivorship data from the Behavioral Risk Factor Surveillance System, and Virginia cancer cost and health care utilization data from the Virginia Health Information Hospital Discharge Patient-Level Dataset. Publicly available Behavioral Risk Factor Surveillance System data, accessible online through the CDC website, were used to facilitate comparisons between Virginia and the United States with respect to risk factors and screening.

Counts were used to show the number of newly diagnosed cases (incidence) and the number of deaths (mortality). Age-adjusted incidence and mortality rates were used to facilitate comparisons across different populations, accounting for differences in population size and age structure. Prevalence estimates were used to show the percentage of people reporting certain screening and risk factor behaviors. Ninety-five percent confidence intervals (95% CIs) were used to quantify random variability in the data. Stratified analyses were performed to look at data by geography (health district), race/ethnicity (African-Americans vs. Whites), and socioeconomic status (education and income) and health care coverage. The ability to look at data by county and by additional racial/ethnic groups was limited by small numbers.

More detailed information can be found in footnotes.

### III. Cancer Overview

### III. Cancer Overview

#### All Sites Cancer Overview

- Cancer is the second leading cause of cancer death (after heart disease) in the United States. Men have about a 44% chance and women about a 37% chance of developing cancer during their lifetime.<sup>1</sup>
- Over the 2004-2008 time period, the incidence rate of cancer was 456.4 cases per 100,000 in Virginia.<sup>2</sup> (U.S. rate=464.4 cases per 100,000)<sup>3</sup>
- The five health districts with the highest all sites cancer rates in Virginia were Chesterfield, Crater, Chickahominy, Rappahannock, and Hampton. The five health districts with the lowest rates were Alexandria, Loudon, Arlington, Fairfax, and Prince William. There appeared to be a band of high cancer incidence that stretched from Crater Health District up to the northwest through Rappahannock/Rapidan Health District.<sup>2</sup>
- Overall, African-Americans had a higher all sites cancer incidence rate than Whites due to an especially high rate in African-American males. Of African-American and White males and females, African-American males had the highest rate of cancer incidence followed by White males and African-American females had the lowest rate of cancer incidence.<sup>2</sup>
- Over the 2005-2009 time period, the mortality rate from cancer was 182.0 deaths per 100,000 in Virginia.<sup>4</sup> (U.S. rate=178.4 deaths per 100,000)<sup>5</sup>
- The five health districts with the highest all sites cancer mortality rates in Virginia were Crater, Portsmouth, Lenowisco, Eastern Shore, and Chesterfield. The five health districts with the lowest rates were Alexandria, Arlington, Fairfax, Loudoun, and Prince William.<sup>4</sup>
- African-Americans had a higher all sites cancer mortality rate than Whites. The cancer mortality rate was especially high in African-American males. African-American males and females had higher cancer mortality rates than White males and females, respectively.<sup>4</sup>
- In Virginia in 2009, there were 23,760 inpatient hospitalizations for cancer at a total cost of over \$1 billion. The average length of stay was 6.4 days and the average charge per stay was \$44,806.<sup>6</sup>

<sup>1</sup>American Cancer Society *Cancer Facts & Figures 2009* (<http://www.cancer.org>)

<sup>2</sup> Virginia Cancer Registry. Based on combined data from 2004-2008. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>3</sup>Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK (eds). *SEER Cancer Statistics Review, 1975-2008*, National Cancer Institute. Bethesda, MD, [http://seer.cancer.gov/csr/1975\\_2008/](http://seer.cancer.gov/csr/1975_2008/), based on November 2010 SEER data submission, posted to the SEER web site, 2011. Based on combined data from 2004-2008. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>4</sup>VDH Division of Health Statistics. Based on combined data from 2005-2009. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>5</sup> Xu JQ, Kochanek KD, Murphy SL, Tejada-Vera B. Deaths: Final data for 2007. National vital statistics reports; vol 58 no 19. Hyattsville, MD: National Center for Health Statistics. 2010. Available from: [http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58\\_19.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58_19.pdf). National rate is the 2007 age-adjusted rate, which is comparable to the state five-year interval midpoint.

<sup>6</sup>VDH Virginia Health Information Hospital Discharge Patient-Level Dataset.

### III. Cancer Overview

#### Breast Cancer (Female) Overview

- Breast cancer is the most commonly diagnosed cancer (excluding non-melanoma skin cancer) and the second leading cause of cancer death (after lung cancer) among women in the United States. One in eight women will be diagnosed with breast cancer during her lifetime.<sup>1</sup>
- Over the 2004-2008 time period, the incidence rate of breast cancer was 124.2 cases per 100,000 women in Virginia.<sup>2</sup> (U.S. rate=124.0 cases per 100,000 women)<sup>3</sup>
- Chesterfield, Henrico, and Portsmouth had the highest incidence rates of breast cancer among the 35 health districts.<sup>2</sup>
- Over the 2005-2009 time period, the mortality rate from breast cancer was 24.7 deaths per 100,000 women in Virginia.<sup>4</sup> (U.S. rate=22.9 deaths per 100,000 women)<sup>5</sup>
- Portsmouth, Norfolk, and Lenowisco had the highest mortality rates from breast cancer among the 35 health districts.<sup>4</sup>
- White and black women in Virginia were diagnosed with breast cancer at similar rates;<sup>2</sup> however, black women had a mortality rate that was over 50% higher than that of white women.<sup>4</sup>
- Breast cancer has a five-year relative survival rate of 98 percent if diagnosed in its earliest (local) stage when it is most curable.<sup>1</sup> In Virginia, 60 percent of breast cancer diagnosed was local stage.<sup>2</sup>
- New River, Western Tidewater, and Norfolk had the lowest percentage of breast cancer cases diagnosed local stage among the 35 health districts.<sup>2</sup>
- White women (62%) were more likely to have their breast cancer diagnosed local stage than African-American women (52%).<sup>2</sup>
- According to 2008 health behavior survey data, 78% of Virginia women 40 years and older reported having had a mammogram in the previous two years. (U.S. average=76%)<sup>6</sup>
- Loud Fairfax, Central Virginia, and Cumberland Plateau had the lowest mammography screening rates among the 35 health districts.<sup>7</sup>
- Mammography screening rates were lower among women who were less educated, lower income, and uninsured. Mammography screening rates did not differ significantly between African-American and white women.<sup>7</sup>
- In Virginia in 2009, there were 1,751 inpatient hospitalizations for female breast cancer, at a total cost of over \$53.5 million. The average length of stay was 2.4 days and the average charge per stay was \$30,567.<sup>8</sup>

<sup>1</sup>American Cancer Society *Cancer Facts & Figures 2009* (<http://www.cancer.org>)

<sup>2</sup>Virginia Cancer Registry. Based on combined data from 2004-2008. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>3</sup>Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK (eds). *SEER Cancer Statistics Review, 1975-2008*, National Cancer Institute. Bethesda, MD, [http://seer.cancer.gov/csr/1975\\_2008/](http://seer.cancer.gov/csr/1975_2008/), based on November 2010 SEER data submission, posted to the SEER web site, 2011. Based on combined data from 2004-2008. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>4</sup>VDH Division of Health Statistics. Based on combined data from 2005-2009. Rates are age-adjusted to the 2000 U.S. standard population.

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<sup>5</sup> Xu JQ, Kochanek KD, Murphy SL, Tejada-Vera B. Deaths: Final data for 2007. National vital statistics reports; vol 58 no 19. Hyattsville, MD: National Center for Health Statistics. 2010. Available from: [http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58\\_19.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58_19.pdf). National rate is the 2007 age-adjusted rate, which is comparable to the state five-year interval midpoint.

<sup>6</sup>Centers for Disease Control and Prevention (CDC). *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2008. (<http://apps.nccd.cdc.gov/brfss>) Accessed 6/2/10.

<sup>7</sup>Virginia Risk Factor Surveillance System. Based on 2006 and 2008 data (pooled). Percentages are population-weighted.

<sup>8</sup>VDH Virginia Health Information Hospital Discharge Patient-Level Dataset.

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#### Cervical Cancer Overview

- Cervical cancer is not among the top ten cancers diagnosed, nor is it among the top ten causes of cancer death, among women in the United States. One in 145 women will be diagnosed with cervical cancer during her lifetime. Cervical cancer incidence and mortality have fallen substantially over the last several decades due to Pap test screening.<sup>1</sup>
- Over the 2004-2008 time period, the incidence rate of cervical cancer was 6.7 cases per 100,000 women in Virginia.<sup>2</sup>(U.S. rate=8.1 cases per 100,000 women)<sup>3</sup>
- Eastern Shore, Portsmouth, and Norfolk had the highest incidence rates of cervical cancer among the 35 health districts.<sup>2</sup>
- Over the 2005-2009 time period, the mortality rate from cervical cancer was 2.2 deaths per 100,000 women in Virginia.<sup>4</sup> (U.S. rate=2.4 deaths per 100,000 women)<sup>5</sup>
- Cervical cancer incidence rates did not differ significantly between African-American and white women;<sup>2</sup> however, African-American women had a mortality rate that was 74% higher than that of white women.<sup>4</sup>
- Cervical cancer has a five-year relative survival rate of 92 percent if diagnosed in its earliest (local) stage when it is most curable.<sup>1</sup> In Virginia, 46% of cervical cancer diagnosed was local stage.<sup>2</sup>
- White women (48%) were more likely to have their cervical cancer diagnosed local stage than African-American women (38%).<sup>2</sup>
- According to 2008 health behavior survey data, 83% of Virginia women aged 18 years and older reported having had a Pap test in the previous three years. (U.S. average=83%)<sup>6</sup>
- Mount Rogers, Central Shenandoah, and West Piedmont had the lowest percentages of Pap test screening among the 35 health districts.<sup>7</sup>
- Pap test screening prevalence was lower among women who were less educated, lower income, and uninsured. Pap test screening did not differ substantially between African-American and white women.<sup>7</sup>
- In Virginia in 2009, there were 253 inpatient hospitalizations for cervical cancer, at a total cost of over \$7.6 million. The average length of stay was 3.8 days and the average charge per stay was \$30,317.<sup>8</sup>

<sup>1</sup>American Cancer Society *Cancer Facts & Figures 2009* (<http://www.cancer.org>)

<sup>2</sup>Virginia Cancer Registry. Based on combined data from 2004-2008. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>3</sup>Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK (eds). *SEER Cancer Statistics Review, 1975-2008*, National Cancer Institute. Bethesda, MD, [http://seer.cancer.gov/csr/1975\\_2008/](http://seer.cancer.gov/csr/1975_2008/), based on November 2010 SEER data submission, posted to the SEER web site, 2011. Based on combined data from 2004-2008. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>4</sup>VDH Division of Health Statistics. Based on combined data from 2005-2009. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>5</sup> Xu JQ, Kochanek KD, Murphy SL, Tejada-Vera B. Deaths: Final data for 2007. National vital statistics reports; vol 58 no 19. Hyattsville, MD: National Center for Health Statistics. 2010. Available from: [http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58\\_19.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58_19.pdf). National rate is the 2007 age-adjusted rate, which is comparable to the state five-year interval midpoint.



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<sup>6</sup> Centers for Disease Control and Prevention (CDC). *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2008. (<http://apps.nccd.cdc.gov/brfss>) Accessed 6/2/10.

<sup>7</sup> Virginia Behavioral Risk Factor Surveillance System. Based on 2006 and 2008 data (pooled). Percentages are population-weighted.

<sup>8</sup> VDH Virginia Health Information Hospital Discharge Patient-Level Dataset.

### III. Cancer Overview

#### Colorectal Cancer Overview

- Colorectal cancer is the third most commonly diagnosed cancer (excluding non-melanoma skin cancer) and the third leading cause of cancer death among men and women in the United States. One in eighteen men and one in twenty women will be diagnosed with colorectal cancer during their lifetime. Colorectal cancer incidence and mortality rates have fallen over the past couple of decades.<sup>1</sup>
- Over the 2004-2008 time period, the incidence rate of colorectal cancer in Virginia was 45.1 cases per 100,000.<sup>2</sup> (U.S. rate=47.2 cases per 100,000)<sup>3</sup>
- Central Virginia Pittsylvania/Danville, and Portsmouth had the highest incidence rates of colorectal cancer among the 35 health districts.<sup>2</sup>
- Over the 2005-2009 time period, the mortality rate from colorectal cancer in Virginia was 16.7 deaths per 100,000.<sup>4</sup> (U.S. rate=16.9 deaths per 100,000)<sup>5</sup>
- Portsmouth, Chesterfield, and Western Tidewater had the highest mortality rates from colorectal cancer among the 35 health districts.<sup>4</sup>
- Incidence rates in Virginia were higher in men compared to women and in African-Americans compared to whites. African-American men were diagnosed with colorectal cancer at an especially high rate. Incidence rate (per 100,000 population) = 65.5 for African-American men, 50.0 for white men, 48.8 for African-American women, and 37.7 for white women.<sup>2</sup>
- Mortality rates in Virginia were higher in men compared to women and in African-Americans compared to whites. African-American men died from colorectal cancer at an especially high rate. Mortality rate (per 100,000 population) = 29.8 for African-American men, 19.9 for African-American women, 18.6 for white men, and 13.4 for white women.<sup>4</sup>
- Colorectal cancer has a five-year relative survival rate of 90 percent if diagnosed in its earliest (local) stage when it is most curable.<sup>1</sup> In Virginia, 40 percent of colorectal cancer diagnosed was local stage.<sup>2</sup>
- Arlington, Eastern Shore, and Chesterfield had the lowest percentage of colorectal cancer cases diagnosed local stage among the 35 health districts.<sup>2</sup>
- The percentage of colorectal cancer cases diagnosed local stage was low for whites (41%) and African-Americans (37%).<sup>2</sup>
- According to 2008 health behavior survey data, 70% of Virginia adults aged 50 years and older reported ever having had an endoscopy (e.g. colonoscopy, sigmoidoscopy). (U.S. average=62%)<sup>6</sup>
- Lenowisco, New River, and Southside had the lowest percentages of colorectal screening among the 35 health districts.<sup>7</sup>
- Colorectal screening rates were lower among adults who were less educated, lower income, and uninsured but did not differ significantly between African-Americans and whites.<sup>7</sup>
- In Virginia in 2009, there were 3,093 inpatient hospitalizations for colorectal cancer, at a total cost of over \$156 million. The average length of stay was 8.0 days and the average charge per stay was \$50,470.<sup>8</sup>

### III. Cancer Overview

<sup>1</sup>American Cancer Society *Cancer Facts & Figures 2009* (<http://www.cancer.org>)

<sup>2</sup>Virginia Cancer Registry. Based on combined data from 2004-2008. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>3</sup>Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK (eds). *SEER Cancer Statistics Review, 1975-2008*, National Cancer Institute. Bethesda, MD, [http://seer.cancer.gov/csr/1975\\_2008/](http://seer.cancer.gov/csr/1975_2008/), based on November 2010 SEER data submission, posted to the SEER web site, 2011. Based on combined data from 2004-2008. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>4</sup>VDH Division of Health Statistics. Based on combined data from 2005-2009. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>5</sup>Xu JQ, Kochanek KD, Murphy SL, Tejada-Vera B. Deaths: Final data for 2007. National vital statistics reports; vol 58 no 19. Hyattsville, MD: National Center for Health Statistics. 2010. Available from: [http://www.cdc.gov/nchs/data/nvsr/nvsr58\\_19.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58_19.pdf). National rate is the 2007 age-adjusted rate, which is comparable to the state five-year interval midpoint.

<sup>6</sup>Centers for Disease Control and Prevention (CDC). *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2008. (<http://apps.nccd.cdc.gov/brfss>) Accessed 6/2/10.

<sup>7</sup>Virginia Behavioral Risk Factor Surveillance System. Based on 2006 and 2008 (pooled) data. Percentages are population-weighted.

<sup>8</sup>VDH Virginia Health Information Hospital Discharge Patient-Level Dataset.

### III. Cancer Overview

#### Lung and Bronchus Cancer Overview

- Lung and bronchus cancer is the second most commonly diagnosed cancer (excluding non-melanoma skin cancer) and the leading cause of cancer death among both men and women in the United States. One in thirteen men and one in sixteen women will be diagnosed with lung and bronchus cancer during their lifetime. Incidence and mortality rates among men have fallen over the last two decades. Increasing incidence and mortality rates among women have leveled off in recent years.<sup>1</sup>
- Over the 2004-2008 time period, the incidence rate of lung and bronchus cancer in Virginia was 68.4 cases per 100,000.<sup>2</sup> (U.S. rate=62.0 cases per 100,000)<sup>3</sup>
- Lenowisco, Crater, and Roanoke had the highest incidence rates of lung and bronchus cancer among the 35 health districts.<sup>2</sup>
- Over the 2005-2009 time period, the mortality rate from lung and bronchus cancer in Virginia was 52.7 deaths per 100,000.<sup>4</sup> (U.S. rate=50.6 deaths per 100,000)<sup>5</sup>
- Lenowisco, Eastern Shore, and Crater had the highest mortality rates from lung and bronchus cancer among the 35 health districts.<sup>4</sup>
- Incidence rates were higher in men compared to women in Virginia. African-American men were diagnosed with lung and bronchus cancer at an especially high rate. Incidence rate (per 100,000 population) = 105.3 for African-American men, 86.5 for white men, 56.1 for white women, and 49.9 for African-American women.<sup>2</sup>
- Mortality rates were higher in men compared to women in Virginia. African-American men died from lung and bronchus cancer at an especially high rate. Mortality rate (per 100,000 population) = 88.7 for African-American men, 68.2 for white men, 41.9 for white women, and 38.3 for African-American women.<sup>4</sup>
- Lung and bronchus cancer has a five-year relative survival rate of 50 percent if diagnosed in its earliest (local) stage.<sup>1</sup> In Virginia, only 18 percent of lung and bronchus cancer diagnosed was local stage.<sup>2</sup>
- Arlington, Western Tidewater, and Crater had the lowest percentage of lung and bronchus cancer cases diagnosed local stage among the 35 health districts.<sup>2</sup>
- The percentage of lung and bronchus cancer cases diagnosed local stage was low for both whites (19%) and African-Americans (14%) in Virginia.<sup>2</sup>
- According to 2009 health behavior survey data, 19% of adults in Virginia were current smokers (U.S. average=18%).<sup>6</sup>
- Lenowisco, Southside, and Mount Rogers had the highest smoking percentages among the 35 health districts.<sup>7</sup>
- Prevalence of current smoking was higher among those who were less educated, lower income, and uninsured. Current smoking prevalence was about 20% in African-Americans vs. 18% in whites.<sup>7</sup>

### III. Cancer Overview

- In Virginia in 2009, there were 3,210 inpatient hospitalizations for lung and bronchus cancer, at a total cost of over \$138 million. The average length of stay was 6.7 days and the average charge per stay was \$43,064.<sup>8</sup>

<sup>1</sup>American Cancer Society *Cancer Facts & Figures 2009* (<http://www.cancer.org>)

<sup>2</sup> Virginia Cancer Registry. Based on combined data from 2004-2008. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>3</sup> Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK (eds). *SEER Cancer Statistics Review, 1975-2008*, National Cancer Institute. Bethesda, MD, [http://seer.cancer.gov/csr/1975\\_2008/](http://seer.cancer.gov/csr/1975_2008/), based on November 2010 SEER data submission, posted to the SEER web site, 2011. Based on combined data from 2004-2008. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>4</sup> VDH Division of Health Statistics. Based on combined data from 2005-2009. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>5</sup> Xu JQ, Kochanek KD, Murphy SL, Tejada-Vera B. Deaths: Final data for 2007. National vital statistics reports; vol 58 no 19. Hyattsville, MD: National Center for Health Statistics. 2010. Available from: [http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58\\_19.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58_19.pdf). National rate is the 2007 age-adjusted rate, which is comparable to the state five-year interval midpoint.

<sup>6</sup> Centers for Disease Control and Prevention (CDC). *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2009. (<http://apps.nccd.cdc.gov/brfss>) Accessed 6/30/11.

<sup>7</sup> Virginia Behavioral Risk Factor Surveillance System. Based on 2007-2009 data (pooled). Percentages are population-weighted.

<sup>8</sup> VDH Virginia Health Information Hospital Discharge Patient-Level Dataset.

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#### Melanoma Overview

- Melanoma (the most serious form of skin cancer) is among the top five cancers diagnosed among men and women in the United States but is relatively rare as a cause of death. Men have a 2.56% chance and women have a 1.73% chance of being diagnosed with melanoma during their lifetime.<sup>1</sup>
- Over the 2004-2008 time period, the incidence rate of melanoma in Virginia was 20.3 cases per 100,000.<sup>2</sup> (U.S. rate=20.8 cases per 100,000)<sup>3</sup>
- Chesterfield, Virginia Beach, and Thomas Jefferson had the highest incidence rates of melanoma among the 35 health districts.<sup>2</sup>
- Over the 2005-2009 time period, the melanoma mortality rate in Virginia was 3.0 deaths per 100,000.<sup>4</sup> (U.S. rate=2.7 deaths per 100,000)<sup>5</sup>
- Melanoma incidence rates in Virginia were over twenty times greater in whites compared to African-Americans, and were higher in white males compared to white females.<sup>2</sup>
- Melanoma mortality rates in Virginia were about seven times greater in whites compared to African-Americans, and were over twice as high in white males compared to white females.<sup>4</sup>
- Melanoma has a five-year relative survival rate of 99 percent if diagnosed in its earliest (local) stage when it is most curable.<sup>1</sup> In Virginia, 72 percent of melanoma diagnosed was local stage.<sup>2</sup>
- Lord Fairfax, Arlington, and Portsmouth had the lowest percentages of melanoma cases diagnosed local stage among the 35 health districts.<sup>2</sup>
- The percentage of melanoma cases diagnosed local stage was much higher for whites (74%) compared to African-Americans (45%) in Virginia.<sup>2</sup>
- According to 2007 health behavior survey data, about a third (32%) of Virginia adults reported having had a sunburn in the previous 12 months.<sup>6</sup>
- Rappahannock, Loudoun, and Loudoun had the highest percentage of adults reporting a sunburn among the 35 health districts.<sup>6</sup>
- White adults (especially white males) were more likely to report having had a sunburn in the previous 12 months.<sup>6</sup>
- In Virginia in 2009, there were 62 inpatient hospitalizations for melanoma, at a total cost of over \$1.6 million. The average length of stay was 4.7 days and the average charge per stay was \$26,449.<sup>7</sup>

<sup>1</sup>American Cancer Society *Cancer Facts & Figures 2009* (<http://www.cancer.org>)

<sup>2</sup>Virginia Cancer Registry. Based on combined data from 2004-2008. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>3</sup>Howlander N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK (eds). *SEER Cancer Statistics Review, 1975-2008*, National Cancer Institute. Bethesda, MD, [http://seer.cancer.gov/csr/1975\\_2008/](http://seer.cancer.gov/csr/1975_2008/), based on November 2010 SEER data submission, posted to the SEER web site, 2011. Based on combined data from 2004-2008. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>4</sup>VDH Division of Health Statistics. Based on combined data from 2005-2009. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>5</sup>Xu JQ, Kochanek KD, Murphy SL, Tejada-Vera B. Deaths: Final data for 2007. National vital statistics reports; vol 58 no 19. Hyattsville, MD: National Center for Health Statistics. 2010. Available from: [http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58\\_19.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58_19.pdf). National rate is the 2007 age-adjusted rate, which is comparable to the state five-year interval midpoint.

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<sup>6</sup> Virginia Behavioral Risk Factor Surveillance System. Based on 2007 data. Percentages are population-weighted.

<sup>7</sup> VDH Virginia Health Information Hospital Discharge Patient-Level Dataset.

### III. Cancer Overview

#### Oral Cavity Cancer Overview

- Oral cancer is among the top ten most commonly diagnosed cancers among men but not among women in the United States. It is relatively rare as a cause of death. Incidence and mortality rates in both men and women have fallen over the last couple of decades.<sup>1</sup>
- Over the 2004-2008 time period, the incidence rate of oral cancer in Virginia was 10.4 cases per 100,000.<sup>2</sup> (U.S. rate=10.6 cases per 100,000)<sup>3</sup>
- Portsmouth, Eastern Shore, and Crater had the highest incidence rates of oral cancer among the 35 health districts.<sup>2</sup>
- Over the 2005-2009 time period, the mortality rate from oral cancer in Virginia was 2.2 deaths per 100,000.<sup>4</sup> (U.S. rate=2.5 deaths per 100,000)<sup>5</sup>
- Incidence rates were higher in men (15.9 cases per 100,000) compared to women (5.7 cases per 100,000) in Virginia. The incidence rate was higher for African-American males (16.9 per 100,000) compared to white males (15.9 per 100,000) and was higher among white females (6.0 per 100,000) compared to African-American females (4.5 per 100,000).<sup>2</sup>
- Mortality rates were higher in men (3.6 deaths per 100,000) compared to women (1.2 deaths per 100,000) in Virginia. Mortality rates were similar for African-American and white females but were significantly higher for African-American males (5.6 deaths per 100,000) compared to white males (3.3 deaths per 100,000).<sup>4</sup>
- Oral cancer has a five-year relative survival rate of 82 percent if diagnosed in its earliest (local) stage when it is most curable.<sup>1</sup> In Virginia, 32 percent of oral cancer diagnosed was local stage.<sup>2</sup>
- Portsmouth, Norfolk, and Western Tidewater had the lowest percentages of oral cancer cases diagnosed local stage among the 35 health districts.<sup>2</sup>
- The percentage of oral cancers diagnosed local stage was lower for males (28%) compared to females (41%) and for African-Americans (22%) compared to whites (34%).<sup>2</sup>
- According to recent state health behavior survey data, about 4% of adults aged 18 years and older reported currently using smokeless tobacco, a major risk factor for oral cancer. About 43% of adults aged 40 years and older reported that they had an oral cancer examination in the previous year.<sup>6</sup>
- Lenowisco, Cumberland Plateau, and West Piedmont had the highest percentages of smokeless tobacco use among the 35 health districts.<sup>6</sup>
- Lenowisco, Cumberland Plateau, and Mount Rogers had the lowest prevalence of oral cancer screening among the 35 health districts.<sup>6</sup>
- Smokeless tobacco use was higher among whites (compared to African-Americans) and among adults who were less educated and lower income.<sup>6</sup>
- Oral cancer screening was less prevalent in African-Americans compared to whites and in adults who were less educated, lower income, and did not have insurance.<sup>6</sup>



### III. Cancer Overview

- In Virginia in 2009, there were 387 inpatient hospitalizations for oral cavity cancer, at a total cost of close to \$20 million. The average length of stay was 6.3 days and the average charge per stay was \$51,392.<sup>7</sup>

<sup>1</sup>American Cancer Society *Cancer Facts & Figures 2009* (<http://www.cancer.org>)

<sup>2</sup>Virginia Cancer Registry. Based on combined data from 2004-2008. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>3</sup>Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK (eds). *SEER Cancer Statistics Review, 1975-2008*, National Cancer Institute. Bethesda, MD, [http://seer.cancer.gov/csr/1975\\_2008/](http://seer.cancer.gov/csr/1975_2008/), based on November 2010 SEER data submission, posted to the SEER web site, 2011. Based on combined data from 2004-2008. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>4</sup>VDH Division of Health Statistics. Based on combined data from 2005-2009. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>5</sup>Xu JQ, Kochanek KD, Murphy SL, Tejada-Vera B. Deaths: Final data for 2007. National vital statistics reports; vol 58 no 19. Hyattsville, MD: National Center for Health Statistics. 2010. Available from: [http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58\\_19.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58_19.pdf). National rate is the 2007 age-adjusted rate, which is comparable to the state five-year interval midpoint.

<sup>6</sup>Virginia Behavioral Risk Factor Surveillance System. Data on smokeless tobacco use is from 2005 and 2009 (combined) and data on oral cancer screening from 2006 and 2009 (combined). Percentages are population-weighted.

<sup>7</sup>VDH Virginia Health Information Hospital Discharge Patient-Level Dataset.

### III. Cancer Overview

#### Ovarian Cancer Overview

- Ovarian cancer is the ninth most commonly diagnosed cancer (excluding non-melanoma skin cancer) and the fifth leading cause of cancer death among women in the United States.<sup>1</sup>
- Over the 2004-2008 time period, the incidence rate of ovarian cancer among women in Virginia was 12.0 cases per 100,000.<sup>2</sup> (U.S. rate=12.8 cases per 100,000)<sup>3</sup>
- Lenowisco, Roanoke, and Loud Fairfax had the highest incidence rates of ovarian cancer among the 35 health districts.<sup>2</sup>
- Over the 2005-2009 time period, the mortality rate from ovarian cancer among women in Virginia was 8.5 deaths per 100,000.<sup>4</sup> (U.S. rate=8.2 deaths per 100,000)<sup>5</sup>
- Hampton, Rappahannock/Rapidan, Central Shenandoah, and Chickahominy had the highest ovarian cancer mortality rates among the 35 health districts.<sup>4</sup>
- In Virginia, incidence rates were higher in white women (12.5 cases per 100,000) compared to African-American women (8.8 cases per 100,000).<sup>2</sup> Ovarian cancer mortality rates were also higher among white women (9.0 deaths per 100,000) compared to African-American women (6.8 deaths per 100,000).<sup>4</sup>
- Ovarian cancer has a five-year relative survival rate of 93 percent if diagnosed in its earliest (local) stage when it is most curable.<sup>1</sup> In Virginia, only 14 percent of ovarian cancer diagnosed was local stage.<sup>2</sup>
- The percentage of ovarian cancer cases diagnosed local stage was similar for both white (14%) and African-American (13%) women in Virginia.<sup>2</sup>
- In Virginia in 2009, there were 551 inpatient hospitalizations for ovarian cancer, at a total cost of over \$23 million. The average length of stay was 6.2 days and the average charge per stay was \$42,093.<sup>6</sup>

<sup>1</sup>American Cancer Society *Cancer Facts & Figures 2009* (<http://www.cancer.org>)

<sup>2</sup> Virginia Cancer Registry. Based on combined data from 2004-2008. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>3</sup> Howlander N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK (eds). *SEER Cancer Statistics Review, 1975-2008*, National Cancer Institute. Bethesda, MD, [http://seer.cancer.gov/csr/1975\\_2008/](http://seer.cancer.gov/csr/1975_2008/), based on November 2010 SEER data submission, posted to the SEER web site, 2011. Based on combined data from 2004-2008. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>4</sup> VDH Division of Health Statistics. Based on combined data from 2005-2009. Rates are age-adjusted to the 2000 U.S. standard population. Health districts with small mortality numbers are shown in white and not included in quantiles for mortality map.

<sup>5</sup> Xu JQ, Kochanek KD, Murphy SL, Tejada-Vera B. Deaths: Final data for 2007. National vital statistics reports; vol 58 no 19. Hyattsville, MD: National Center for Health Statistics. 2010. Available from: [http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58\\_19.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58_19.pdf). National rate is the 2007 age-adjusted rate, which is comparable to the state five-year interval midpoint.

<sup>6</sup> VDH Virginia Health Information Hospital Discharge Patient-Level Dataset.

### III. Cancer Overview

#### Prostate Cancer Overview

- Prostate cancer is the most commonly diagnosed cancer (excluding non-melanoma skin cancer) and the second leading cause of cancer death among men in the United States. One in six men will be diagnosed with prostate cancer during his lifetime.<sup>1</sup>
- Over the 2004-2008 time period, the incidence rate of prostate cancer among men in Virginia was 159.4 cases per 100,000.<sup>2</sup> (U.S. rate=156.0 cases per 100,000)<sup>3</sup>
- Chesterfield, Richmond City, and Crater had the highest incidence rates of prostate cancer among the 35 health districts.<sup>2</sup>
- Over the 2005-2009 time period, the mortality rate from prostate cancer among men in Virginia was 25.7 deaths per 100,000.<sup>4</sup> (U.S. rate=23.5 deaths per 100,000)<sup>5</sup>
- Crater, Portsmouth, and Western Tidewater had the highest mortality rates from prostate cancer among the 35 health districts.<sup>4</sup>
- Incidence rates were over 65% higher in African-American men compared to white men in Virginia.<sup>2</sup>
- Mortality rates were about 2.5 times greater in African-American men compared to white men in Virginia.<sup>4</sup>
- Prostate cancer has a five-year relative survival rate of about 100 percent if diagnosed in its earliest (local) stage.<sup>1</sup> In Virginia, 77 percent of prostate cancer diagnosed was local stage.<sup>2</sup>
- Richmond City, Alexandria, and Eastern Shore had the lowest percentages of prostate cancer cases diagnosed local stage among the 35 health districts.<sup>2</sup>
- The percentage of prostate cancer cases diagnosed local stage was similar for whites (78%) and African-Americans (76%) in Virginia.<sup>2</sup>
- According to 2008 health behavior survey data, 59% of Virginia men 50 years and older reported having had a PSA screening test in the previous two years (U.S. average=55%).<sup>6</sup>
- Richmond City, Lenowisco, and Peninsula had the lowest percentages of PSA screening among the 35 health districts.<sup>7</sup>
- PSA screening rates were lower among men who were less educated and uninsured.<sup>7</sup>
- In Virginia in 2009, there were 1,694 inpatient hospitalizations for prostate cancer, at a total cost of over \$61 million. The average length of stay was 2.4 days and the average charge per stay was \$36,059.<sup>8</sup>

<sup>1</sup>American Cancer Society *Cancer Facts & Figures 2009* (<http://www.cancer.org>)

<sup>2</sup> Virginia Cancer Registry. Based on combined data from 2004-2008. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>3</sup> Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA, Edwards BK (eds). *SEER Cancer Statistics Review, 1975-2008*, National Cancer Institute. Bethesda, MD, [http://seer.cancer.gov/csr/1975\\_2008/](http://seer.cancer.gov/csr/1975_2008/), based on November 2010 SEER data submission, posted to the SEER web site, 2011. Based on combined data from 2004-2008. Rates are age-adjusted to the 2000 U.S. standard population.

<sup>4</sup> VDH Division of Health Statistics. Based on combined data from 2005-2009. Rates are age-adjusted to the 2000 U.S. standard population.

### III. Cancer Overview

<sup>5</sup> Xu JQ, Kochanek KD, Murphy SL, Tejada-Vera B. Deaths: Final data for 2007. National vital statistics reports; vol 58 no 19. Hyattsville, MD: National Center for Health Statistics. 2010. Available from: [http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58\\_19.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58_19.pdf). National rate is the 2007 age-adjusted rate, which is comparable to the state five-year interval midpoint.

<sup>6</sup> Centers for Disease Control and Prevention (CDC). *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2008. (<http://apps.nccd.cdc.gov/brfss>) Accessed 6/2/10.

<sup>7</sup> Virginia Behavioral Risk Factor Surveillance System. Based on 2006 and 2008 (pooled) data. Percentages are population-weighted.

<sup>8</sup> VDH Virginia Health Information Hospital Discharge Patient-Level Dataset.

### III. Cancer Overview

#### **Pediatric Cancer Overview**

- Over the 2004-2008 period, there were 1,636 cases of cancer among children up to the age of 19 years in Virginia. The incidence rate was 15.8 cases per 100,000. Leukemia and brain and other nervous system cancers were the most common, accounting for 43% of cancer cases.<sup>1</sup>
- Over the 2005-2009 period, there were 209 cancer deaths among children up to the age of 19 years in Virginia. The mortality rate was 20.3 cases per 1,000,000. Leukemia and brain and other nervous system cancers were the most common causes of cancer death, accounting for 54% of cancer deaths.<sup>2</sup>

<sup>1</sup> Virginia Cancer Registry. Based on combined data from 2004-2008. Rate is age-adjusted to the 2000 U.S. standard population.

<sup>2</sup> VDH Division of Health Statistics. Based on combined data from 2005-2009. Rate is age-adjusted to the 2000 U.S. standard population.

## IV. Cancer Data By Health District

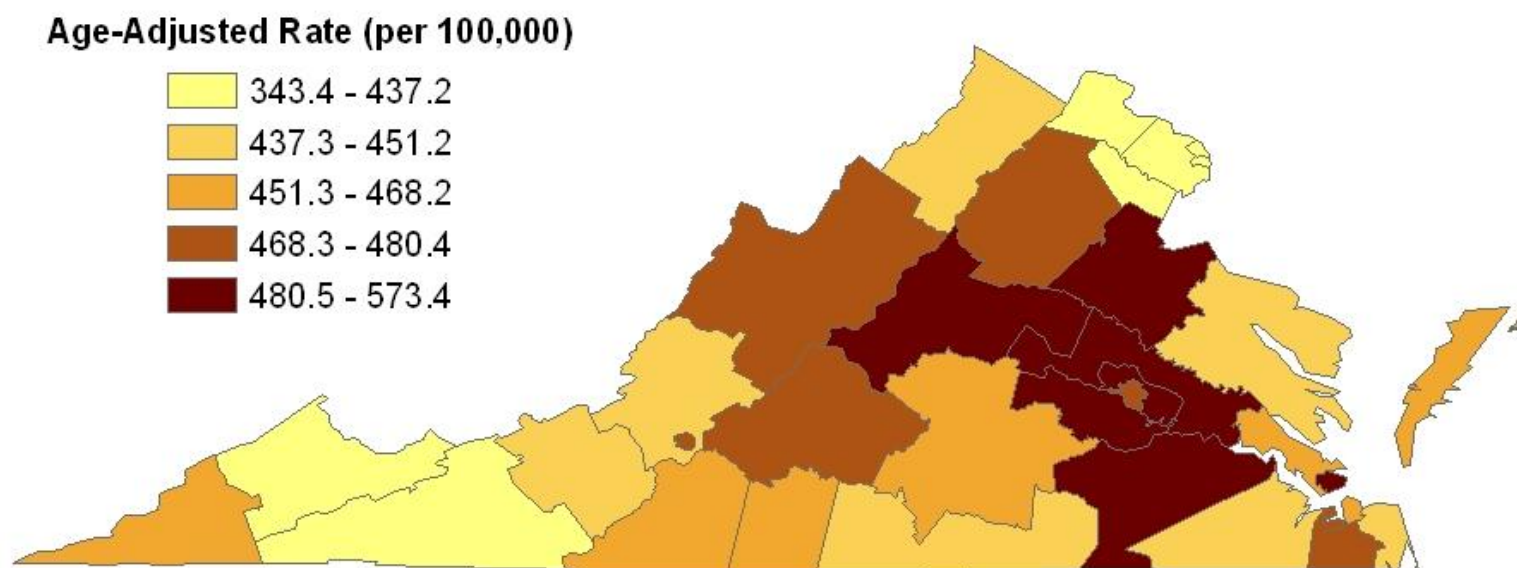
### IV. Cancer Data By Health District

#### All Sites Cancer Data By Health District

Health District	Incidence <sup>1</sup>				Staging <sup>2</sup>		Mortality <sup>3</sup>			
	Count	Rate per 100,00	95% CI	Rank	Percent Local Stage	Rank	Count	Rate per 100,00	95% CI	Rank
Alexandria	2,263	343.4	329.0 - 358.2	35	44%	17	826	124.7	116.2 - 133.2	35
Alleghany	4,833	440.6	428.1 - 453.4	28	47%	31	2,020	178.5	170.7 - 186.3	26
Arlington	3,364	392.5	378.9 - 406.4	33	43%	16	1,139	139.4	131.3 - 147.5	34
Central Shenandoah	7,345	473.7	462.8 - 484.8	13	42%	10	2,910	181.2	174.6 - 187.8	25
Central Virginia	6,787	474.5	463.1 - 486.0	12	45%	19	2,817	190.9	183.9 - 197.9	20
Chesapeake	4,599	469.5	455.7 - 483.6	14	46%	21	1,924	204.9	195.7 - 214.1	8
Chesterfield	8,224	573.4	560.3 - 586.7	1	46%	25	2,824	214.7	206.8 - 222.6	5
Chickahominy	3,859	513.0	496.6 - 529.9	3	46%	23	1,352	184.2	174.4 - 194.0	24
Crater	4,226	524.7	508.9 - 540.9	2	41%	7	1,848	232.3	221.7 - 242.9	1
Cumberland Plateau	3,070	437.2	421.7 - 453.3	29	42%	12	1,446	204.7	194.1 - 215.3	9
Eastern Shore	1,600	465.2	442.3 - 489.1	17	38%	2	764	215.8	200.5 - 231.1	4
Fairfax	20,133	420.7	414.7 - 426.8	32	47%	30	6,383	144.3	140.8 - 147.8	33
Hampton	3,414	499.2	482.5 - 516.4	5	48%	32	1,325	198.0	187.3 - 208.7	15
Henrico	7,075	484.0	472.7 - 495.5	7	46%	26	2,675	177.4	170.7 - 184.1	27
Lenowisco	2,614	468.2	450.2 - 486.7	15	38%	1	1,237	216.9	204.8 - 229.0	3
Lord Fairfax	5,338	451.2	439.1 - 463.6	22	41%	8	2,392	198.9	190.9 - 206.9	11
Loudoun	3,440	387.8	373.7 - 402.2	34	49%	35	1,196	152.1	143.5 - 160.7	32
Mount Rogers	5,492	434.3	422.8 - 446.2	30	43%	15	2,494	190.8	183.3 - 198.3	21
New River	3,724	450.7	436.2 - 465.6	25	45%	18	1,565	187.2	177.9 - 196.5	23
Norfolk	4,606	466.7	453.2 - 480.5	16	40%	3	2,094	213.1	204.0 - 222.2	6
Peninsula	7,864	462.8	452.6 - 473.2	19	48%	33	3,022	176.2	169.9 - 182.5	28
Piedmont	2,776	460.8	443.7 - 478.5	21	42%	11	1,221	198.3	187.2 - 209.4	14
Pittsylvania/Danville	3,208	462.0	445.9 - 478.6	20	46%	28	1,381	192.2	182.1 - 202.3	19
Portsmouth	2,446	477.7	458.9 - 497.2	9	41%	4	1,199	231.1	218.0 - 244.2	2
Prince William	5,891	426.0	414.2 - 438.1	31	46%	24	2,148	174.1	166.7 - 181.5	31
Rappahannock	6,343	510.9	498.0 - 524.1	4	46%	22	2,321	196.4	188.4 - 204.4	16
Rappahannock/Rapidan	4,208	480.4	465.8 - 495.4	8	45%	20	1,636	187.9	178.8 - 197.0	22
Richmond City	4,922	476.3	462.9 - 489.9	10	41%	5	2,160	198.4	190.0 - 206.8	13
Roanoke	2,686	474.9	456.7 - 493.5	11	43%	14	1,179	193.3	182.3 - 204.3	17
Southside	2,602	448.3	430.9 - 466.2	26	41%	6	1,210	202.8	191.4 - 214.2	10
Thomas Jefferson	5,789	486.2	473.6 - 499.0	6	47%	29	2,138	175.6	168.2 - 183.0	29
Three Rivers	4,476	451.2	437.8 - 465.0	23	43%	13	2,029	198.9	190.2 - 207.6	11
Virginia Beach	8,512	441.9	432.4 - 451.5	27	46%	27	3,232	174.4	168.4 - 180.4	30
West Piedmont	4,248	464.2	450.1 - 478.7	18	48%	34	1,799	192.7	183.8 - 201.6	18
Western Tidewater	3,320	451.1	435.7 - 466.9	24	41%	9	1,549	211.8	201.3 - 222.3	7
VIRGINIA	175,297	456.4	454.3 - 458.6		45%		69,456	182.0	180.6 - 183.4	

#### IV. Cancer Data By Health District

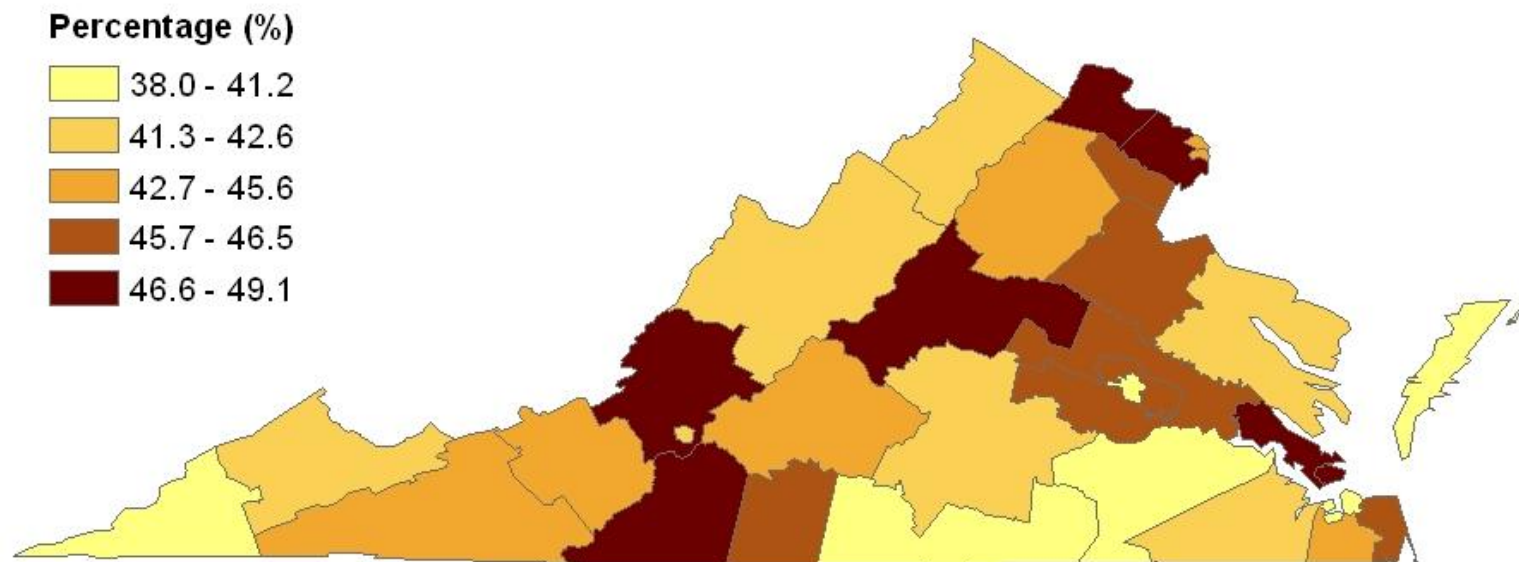
### Cancer Incidence Rate by Health District, All Sites, Virginia, 2004-2008



Source: Virginia Cancer Registry, Virginia Department of Health.  
Rates are age-adjusted to the 2000 U.S. standard population.

#### IV. Cancer Data By Health District

Percentage of Cancer Cases Diagnosed at Local Stage by Health District,  
All Sites, Virginia, 2004-2008

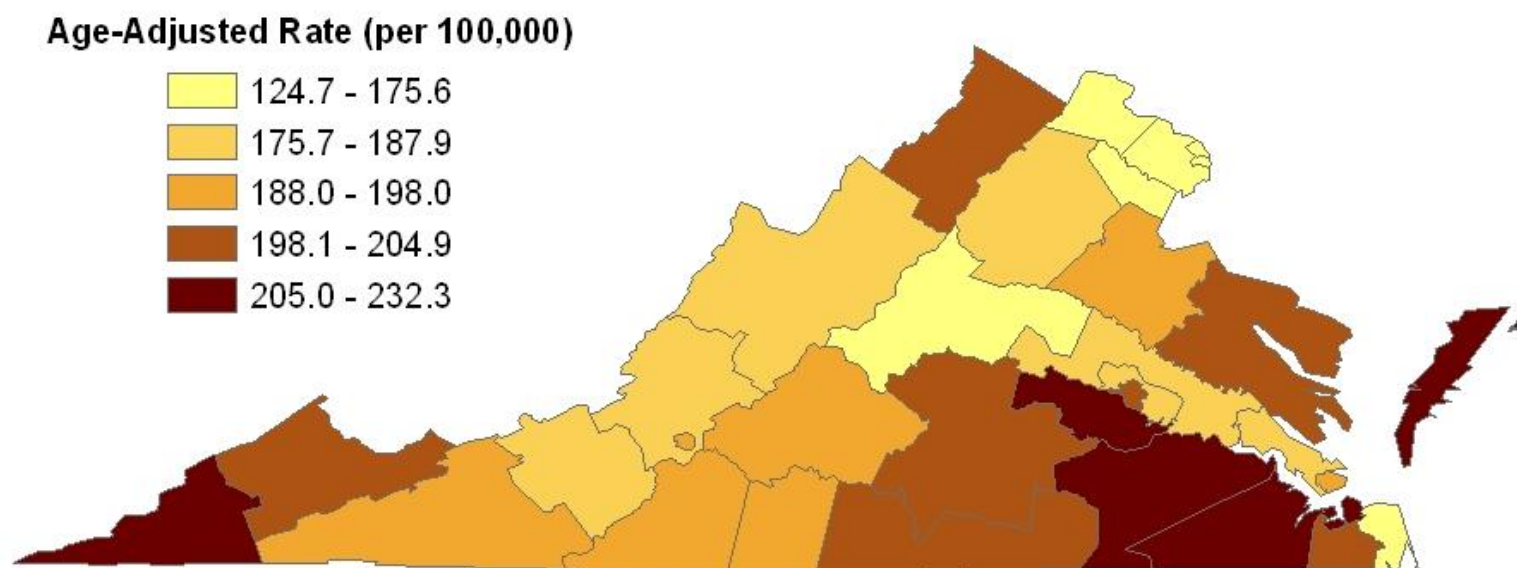


Source: Virginia Cancer Registry, Virginia Department of Health.



#### IV. Cancer Data By Health District

### Cancer Mortality Rate by Health District, All Sites, Virginia, 2005-2009



Source: Division of Health Statistics, Virginia Department of Health.  
Rates are age-adjusted to the 2000 U.S. standard population.

#### IV. Cancer Data By Health District

Sources: Incidence and percent local staging (VA Cancer Registry); mortality (VDH Division of Health Statistics)

<sup>1</sup> Based on combined 2004-2008 data. Age-adjusted rates are reported and adjusted to the 2000 U.S. standard population. Districts are ranked in terms of incidence rates from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher incidence rates) are at greater risk.

<sup>2</sup> Based on combined 2004-2008 data. Percent of Local Stage cancers reported using the Summary Staging System. Districts are ranked in terms of percentage of cases diagnosed early (local) from lowest (=1) to highest (=35). Districts with lower rankings (i.e. lower early stage percentages) are at greater risk.

<sup>3</sup> Based on combined 2005-2009 data. Mortality rates are age-adjusted using the 2000 Standard Population. Districts are ranked in terms of mortality rates from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher mortality rates) are at greater risk.

Top five districts with the highest risk (i.e. lowest ranks) are highlighted.

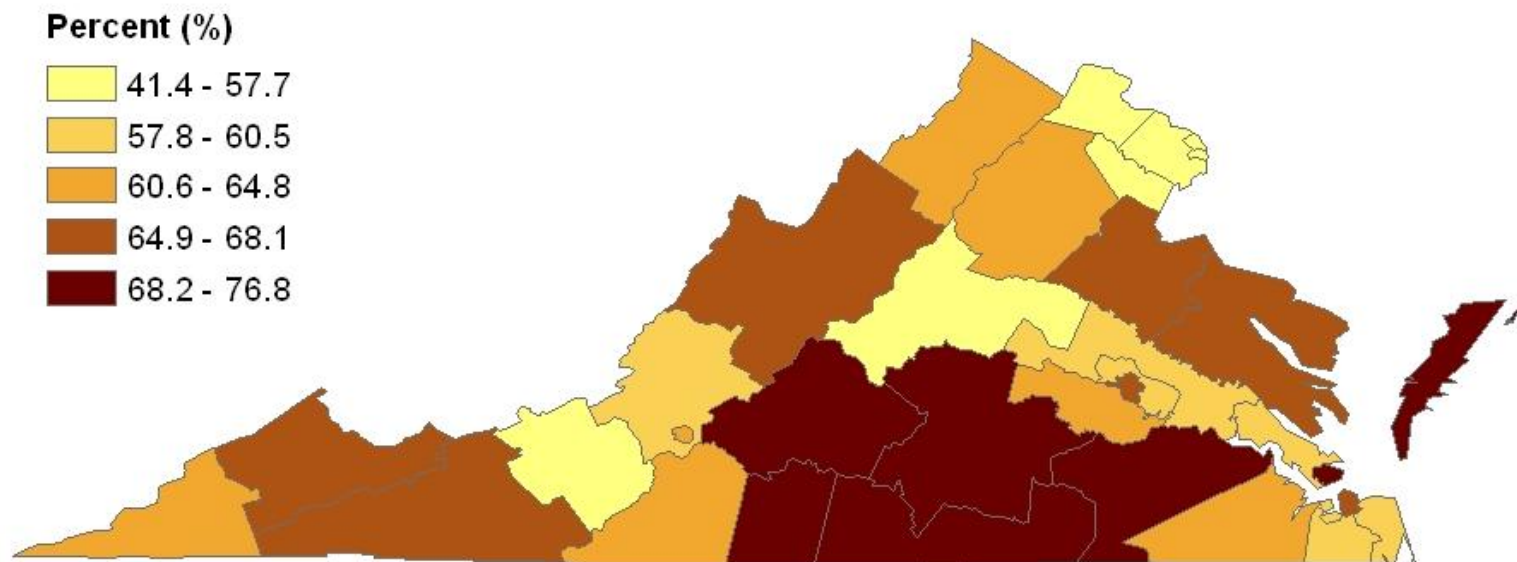
Maps illustrate rates or percentages in quantiles.

IV. Cancer Data By Health District  
Select Cancer Risk Factor Data By Health District

Health District	Overweight <sup>1</sup>			Risk Factor: Current Smoking <sup>2</sup>		
	Prevalence	95% CI	Rank	Prevalence	95% CI	Rank
Alexandria	51.3%	43.0% - 59.5%	34	8.4%	4.0% - 16.6%	35
Alleghany	60.3%	53.0% - 67.2%	23	17.3%	12.6% - 23.2%	23
Arlington	41.4%	34.3% - 48.8%	35	13.9%	9.1% - 20.8%	32
Central Shenandoah	65.2%	57.1% - 72.6%	14	13.1%	9.7% - 17.5%	33
Central Virginia	68.8%	63.1% - 74.0%	7	17.9%	14.1% - 22.5%	21
Chesapeake	57.9%	51.0% - 64.4%	28	15.7%	11.6% - 21.0%	28
Chesterfield	62.3%	55.9% - 68.3%	19	16.8%	12.6% - 22.1%	24
Chickahominy	58.7%	51.3% - 65.7%	26	19.6%	13.5% - 27.5%	18
Crater	76.8%	71.2% - 81.6%	1	23.4%	18.7% - 28.9%	8
Cumberland Plateau	66.9%	59.6% - 73.6%	13	24.1%	19.1% - 29.9%	7
Eastern Shore	75.1%	69.7% - 79.7%	2	22.1%	17.5% - 27.5%	12
Fairfax	55.2%	46.9% - 63.2%	32	9.1%	5.0% - 16.1%	34
Hampton	72.8%	66.6% - 78.2%	3	17.6%	13.5% - 22.7%	22
Henrico	60.5%	54.0% - 66.6%	22	15.9%	11.4% - 21.7%	27
Lenowisco	62.5%	54.9% - 69.5%	18	31.2%	24.7% - 38.6%	1
Lord Fairfax	64.2%	57.7% - 70.3%	16	23.2%	18.2% - 29.1%	9
Loudoun	53.4%	45.4% - 61.2%	33	15.1%	7.8% - 27.1%	29
Mount Rogers	67.4%	61.5% - 72.8%	11	28.6%	23.0% - 34.9%	3
New River	56.3%	49.9% - 62.6%	31	22.3%	17.2% - 28.5%	11
Norfolk	67.4%	61.2% - 73.0%	11	21.0%	16.1% - 26.9%	13
Peninsula	59.9%	52.9% - 66.5%	25	14.3%	10.5% - 19.2%	31
Piedmont	70.6%	63.2% - 77.0%	4	23.2%	18.0% - 29.4%	9
Pittsylvania/Danville	70.6%	63.5% - 76.9%	4	20.1%	15.5% - 25.7%	17
Portsmouth	60.3%	53.4% - 66.9%	23	20.9%	16.0% - 27.0%	14
Prince William	57.7%	49.1% - 65.8%	29	19.6%	12.6% - 29.1%	18
Rappahannock	67.8%	61.7% - 73.4%	10	20.7%	15.6% - 27.1%	15
Rappahannock/Rapidan	62.1%	56.3% - 67.5%	20	16.8%	12.9% - 21.5%	24
Richmond City	67.9%	60.7% - 74.3%	9	18.8%	14.2% - 24.6%	20
Roanoke	63.5%	56.7% - 69.8%	17	27.4%	21.1% - 34.6%	4
Southside	70.2%	63.5% - 76.0%	6	29.8%	23.9% - 36.4%	2
Thomas Jefferson	56.4%	50.6% - 62.1%	30	14.5%	10.6% - 19.5%	30
Three Rivers	68.1%	62.2% - 73.5%	8	24.7%	19.7% - 30.5%	6
Virginia Beach	58.5%	51.5% - 65.1%	27	20.2%	15.7% - 25.7%	16
West Piedmont	64.8%	58.1% - 71.1%	15	27.0%	21.2% - 33.6%	5
Western Tidewater	61.4%	54.1% - 68.3%	21	16.0%	12.2% - 20.9%	26
VIRGINIA	61.6%	60.0% - 63.1%		18.2%	17.1% - 19.4%	

#### IV. Cancer Data By Health District

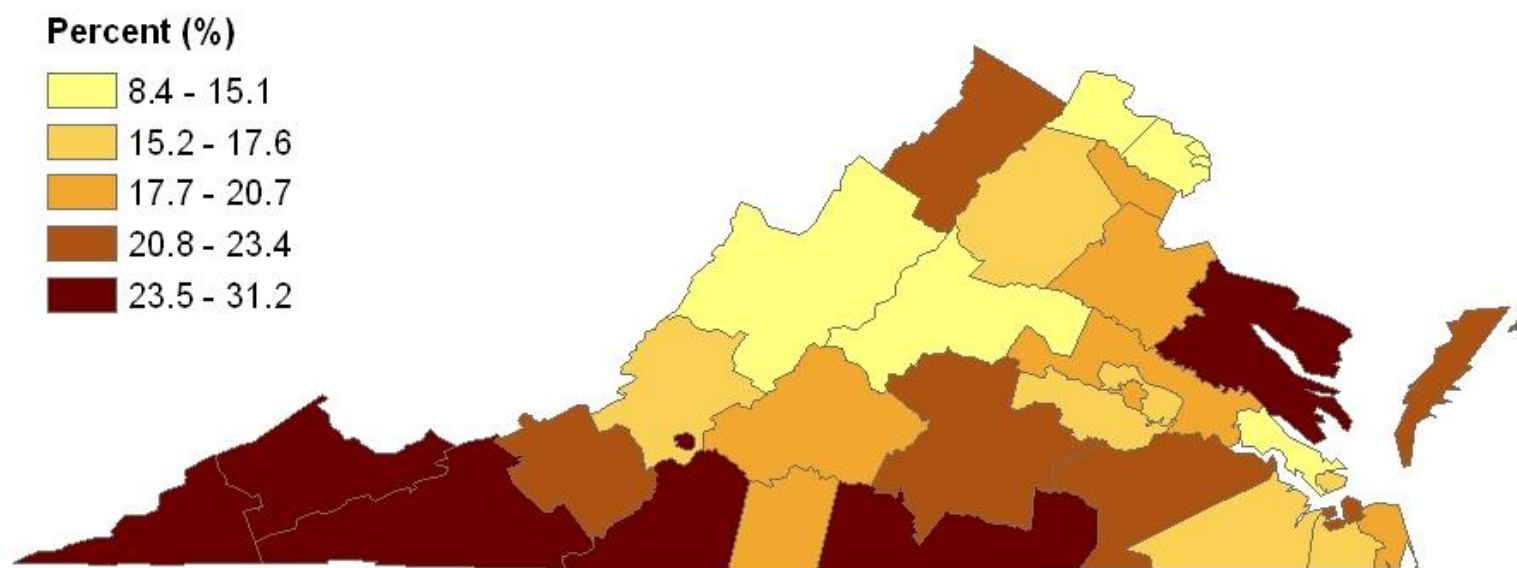
### Overweight by Health District, Adults 18 and Older, Virginia, 2007-2009



Source: Virginia Behavioral Risk Factor Surveillance System. Percentages are weighted.  
Overweight = Percent with BMI greater than or equal to 25.

#### IV. Cancer Data By Health District

Current Cigarette Smoking by Health District,  
Adults 18 and Older, Virginia, 2007-2009



Source: Virginia Behavioral Risk Factor Surveillance System. Percentages are weighted.

#### IV. Cancer Data By Health District

Source: Behavioral Risk Factor Surveillance System

<sup>1</sup> Overweight = Percentage of adults who report having a BMI greater than or equal to 25. Based on 2007-2009 data (pooled). Percentages are population-weighted. Districts are ranked in terms of prevalence from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher overweight percentages) are at greater risk.

<sup>2</sup> Smoking=Percentage of adults who report currently smoking and have smoked at least 100 cigarettes in their lifetime. Based on 2007-2009 data (pooled). Percentages are population-weighted. Districts are ranked in terms of prevalence from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher smoking percentages) are at greater risk.

Top five districts with the highest risk (i.e. lowest ranks) are highlighted.

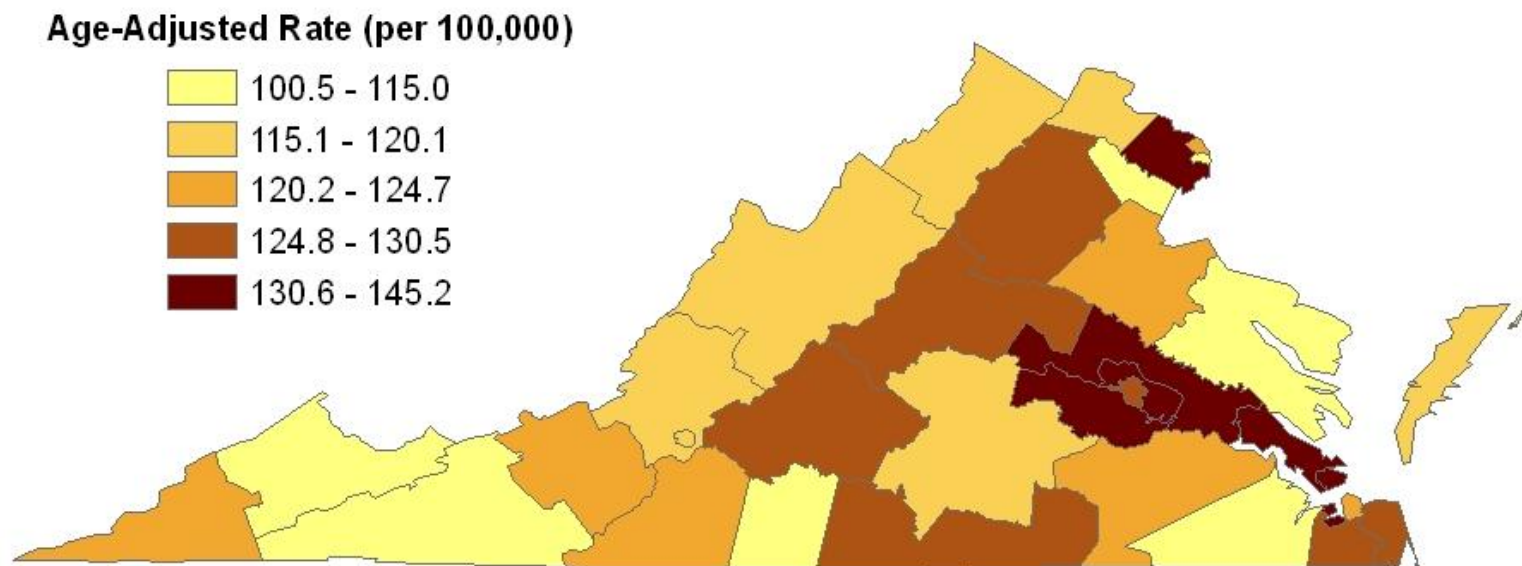
Maps illustrate percentages in quantiles.

IV. Cancer Data By Health District  
Breast Cancer (Female) Data By Health District

Health District	Incidence <sup>1</sup>				Staging <sup>2</sup>		Mortality <sup>3</sup>				Screening Mammography <sup>4</sup>		
	Count	Rate per 100,00	95% CI	Rank	Percent Local Stage	Rank	Count	Rate per 100,00	95% CI	Rank	Prevalence	95% CI	Rank
Alexandria	381	103.1	92.8 - 114.2	33	59%	14	71	18.6	14.3 - 22.9	35	83.3%	70.6% - 91.2%	31
Alleghany	710	120.1	111.3 - 129.5	22	64%	32	156	24.7	20.8 - 28.6	22	83.8%	77.3% - 88.8%	32
Arlington	565	123.4	113.2 - 134.3	16	61%	22	96	20.3	16.2 - 24.4	33	84.5%	76.1% - 90.3%	33
Central Shenandoah	957	117.5	110.1 - 125.4	27	61%	24	186	21.2	18.2 - 24.2	32	71.5%	61.0% - 80.1%	7
Central Virginia	962	126.5	118.5 - 135.0	12	63%	30	192	23.6	20.3 - 26.9	27	68.8%	59.8% - 76.6%	2
Chesapeake	744	130.0	120.7 - 139.8	9	62%	25	151	26.4	22.2 - 30.6	13	80.7%	70.2% - 88.2%	26
Chesterfield	1,247	145.2	137.0 - 153.8	1	61%	21	208	24.3	21.0 - 27.6	24	72.9%	63.3% - 80.8%	10
Chickahominy	557	134.0	123.0 - 145.8	5	62%	27	116	27.6	22.6 - 32.6	7	75.7%	66.0% - 83.4%	16
Crater	539	124.7	114.3 - 135.8	15	58%	12	116	26.2	21.4 - 31.0	15	80.2%	70.7% - 87.1%	24
Cumberland Plateau	379	100.5	90.5 - 111.5	35	55%	6	100	25.2	20.3 - 30.1	19	68.9%	59.5% - 77.0%	3
Eastern Shore	219	116.3	101.1 - 133.4	28	55%	4	53	26.7	19.5 - 33.9	11	74.9%	66.3% - 82.0%	12
Fairfax	3,597	131.9	127.5 - 136.5	6	62%	28	613	23.6	21.7 - 25.5	27	80.3%	70.4% - 87.5%	25
Hampton	516	137.0	125.3 - 149.4	4	63%	29	97	25.2	20.2 - 30.2	19	77.7%	68.5% - 84.7%	21
Henrico	1,172	140.4	132.4 - 148.8	2	60%	20	250	28.2	24.7 - 31.7	6	82.7%	75.2% - 88.3%	30
Lenowisco	349	121.0	108.3 - 134.8	20	62%	26	90	29.2	23.2 - 35.2	2	72.9%	63.7% - 80.5%	10
Lord Fairfax	753	119.6	111.2 - 128.6	24	61%	23	180	27.0	23.1 - 30.9	10	68.7%	59.6% - 76.5%	1
Loudoun	642	119.5	109.7 - 129.8	26	60%	19	113	22.2	18.1 - 26.3	29	81.1%	70.6% - 88.5%	27
Mount Rogers	694	102.3	94.7 - 110.5	34	59%	16	183	25.2	21.5 - 28.9	19	75.2%	67.2% - 81.8%	14
New River	521	120.2	110.0 - 131.2	21	49%	1	100	21.8	17.5 - 26.1	31	79.6%	71.0% - 86.2%	22
Norfolk	673	122.4	113.3 - 132.1	18	55%	3	164	29.2	24.7 - 33.7	2	81.8%	73.8% - 87.7%	29
Peninsula	1,229	131.3	124.0 - 138.9	7	65%	33	232	24.1	21.0 - 27.2	26	77.0%	67.6% - 84.3%	19
Piedmont	372	119.6	107.4 - 132.8	25	59%	18	87	27.3	21.6 - 33.0	9	75.1%	66.1% - 82.4%	13
Pittsylvania/Danville	432	114.1	103.3 - 125.9	30	64%	31	111	27.4	22.3 - 32.5	8	80.2%	72.7% - 86.1%	24
Portsmouth	387	137.3	123.7 - 151.9	3	59%	13	102	34.2	27.6 - 40.8	1	81.8%	74.2% - 87.5%	29
Prince William	972	115.0	107.5 - 122.9	29	57%	7	189	24.3	20.8 - 27.8	24	88.2%	80.1% - 93.3%	35
Rappahannock	876	122.5	114.3 - 131.0	17	58%	10	183	26.3	22.5 - 30.1	14	76.8%	68.1% - 83.7%	18
Rappahannock/Rapidan	606	130.5	120.2 - 141.5	8	59%	17	126	25.9	21.4 - 30.4	17	69.5%	60.6% - 77.2%	5
Richmond City	722	125.7	116.4 - 135.5	14	55%	5	183	28.8	24.6 - 33.0	5	71.6%	62.6% - 79.2%	8
Roanoke	370	120.1	107.7 - 133.6	23	59%	15	89	26.5	21.0 - 32.0	12	69.1%	59.9% - 77.1%	4
Southside	377	127.9	114.8 - 142.3	10	58%	9	85	26.2	20.6 - 31.8	15	75.3%	66.9% - 82.2%	15
Thomas Jefferson	817	127.1	118.5 - 136.3	11	70%	35	135	19.8	16.5 - 23.1	34	84.6%	76.8% - 90.2%	34
Three Rivers	573	111.4	102.1 - 121.3	31	58%	11	132	25.4	21.1 - 29.7	18	77.5%	69.0% - 84.2%	20
Virginia Beach	1,385	126.1	119.5 - 132.9	13	57%	8	266	24.4	21.5 - 27.3	23	76.0%	67.0% - 83.1%	17
West Piedmont	577	121.7	111.7 - 132.4	19	65%	34	115	22.2	18.1 - 26.3	29	70.6%	61.0% - 78.6%	6
Western Tidewater	447	109.9	99.9 - 120.7	32	54%	2	123	29.0	23.9 - 34.1	4	74.5%	65.2% - 82.0%	11
VIRGINIA	26,319	124.2	122.7 - 125.7		60%		5,393	24.7	24.0 - 25.4		77.1%	75.3% - 78.8%	

#### IV. Cancer Data By Health District

### Cancer Incidence Rate by Health District, Breast (Female), Virginia, 2004-2008

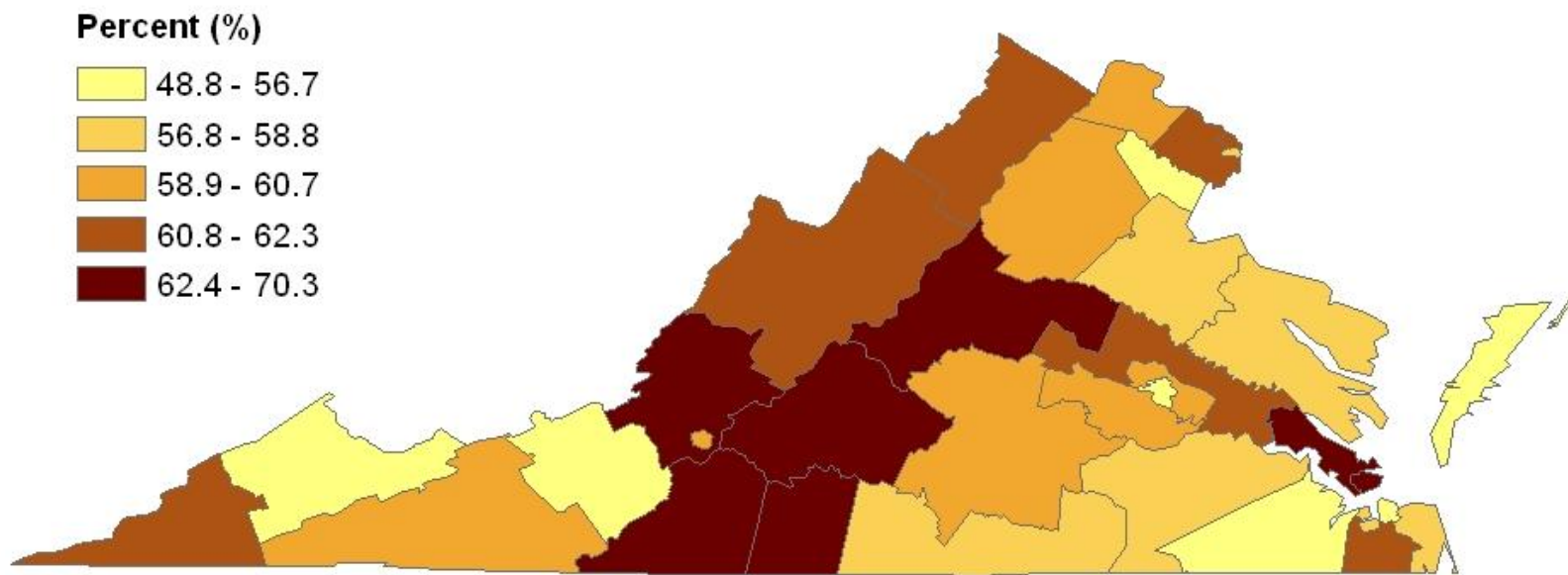


Source: Virginia Cancer Registry, Virginia Department of Health.  
Rates are age-adjusted to the 2000 U.S. standard population.



#### IV. Cancer Data By Health District

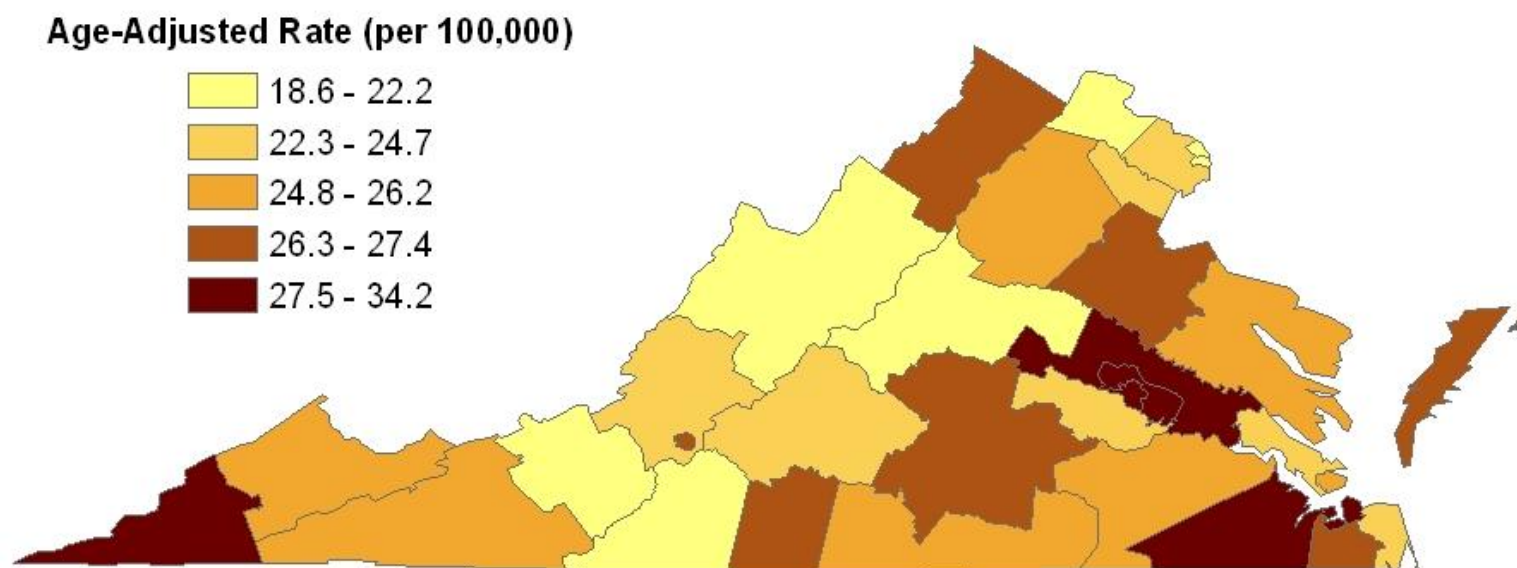
Percentage of Cancer Cases Diagnosed at Local Stage by Health District,  
Breast (Female), Virginia, 2004-2008



Source: Virginia Cancer Registry, Virginia Department of Health.

#### IV. Cancer Data By Health District

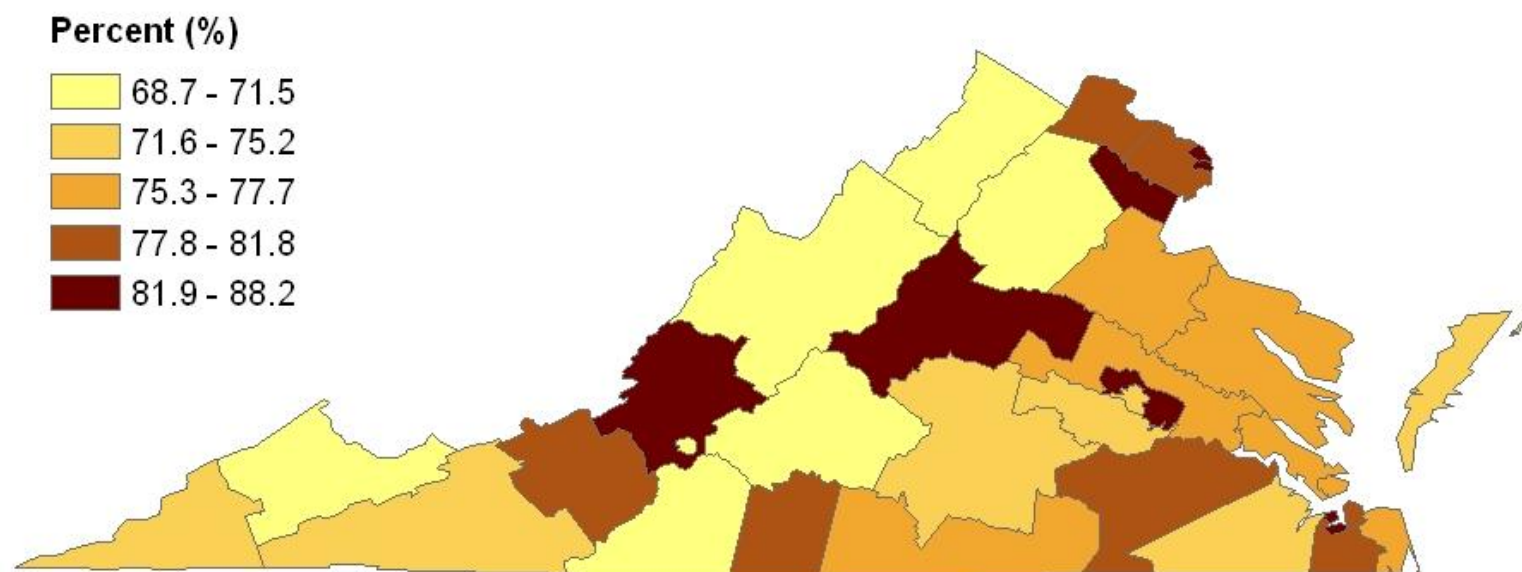
### Cancer Mortality Rate by Health District, Breast (Female), Virginia, 2005-2009



Source: Division of Health Statistics, Virginia Department of Health.  
Rates are age-adjusted to the 2000 U.S. standard population.

#### IV. Cancer Data By Health District

Mammogram in the Past Two Years by Health District,  
Women 40 and Older, Virginia, 2006-2008



Source: Virginia Behavioral Risk Factor Surveillance System. Percentages are weighted.

#### IV. Cancer Data By Health District

**Sources:** Incidence and percent local staging (VA Cancer Registry); mortality (VDH Division of Health Statistics); screening prevalence (Behavioral Risk Factor Surveillance System).

<sup>1</sup>Based on combined 2004-2008 data. Rates are age- adjusted to the 2000 U.S. standard population. Districts are ranked in terms of incidence rates from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher incidence rates) are at greater risk.

<sup>2</sup> Based on combined 2004-2008 data. Percentage of Local Stage cancers are reported using the Summary Staging System. Districts are ranked in terms of percentage of cases diagnosed early (local) from lowest (=1) to highest (=35). Districts with lower rankings (i.e. lower early stage percentages) are at greater risk.

<sup>3</sup>Based on combined 2005-2009 data. Rates are age- adjusted to the 2000 U.S. standard population. Districts are ranked in terms of mortality rates from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher mortality rates) are at greater risk.

<sup>4</sup> Behavioral Risk Factor Surveillance System is a national telephone survey of adults 18+. Breast Cancer Screening = Percent of women age 40 years and older reporting having a mammogram in past two years. Based on 2006 and 2008 data (pooled). Percentages are population-weighted. Districts are ranked in terms of prevalence of mammography from lowest (=1) to highest (=35). Districts with lower rankings (i.e. lower screening prevalence) are at greater risk.

Top five districts with the highest risk (i.e. lowest ranks) are highlighted.

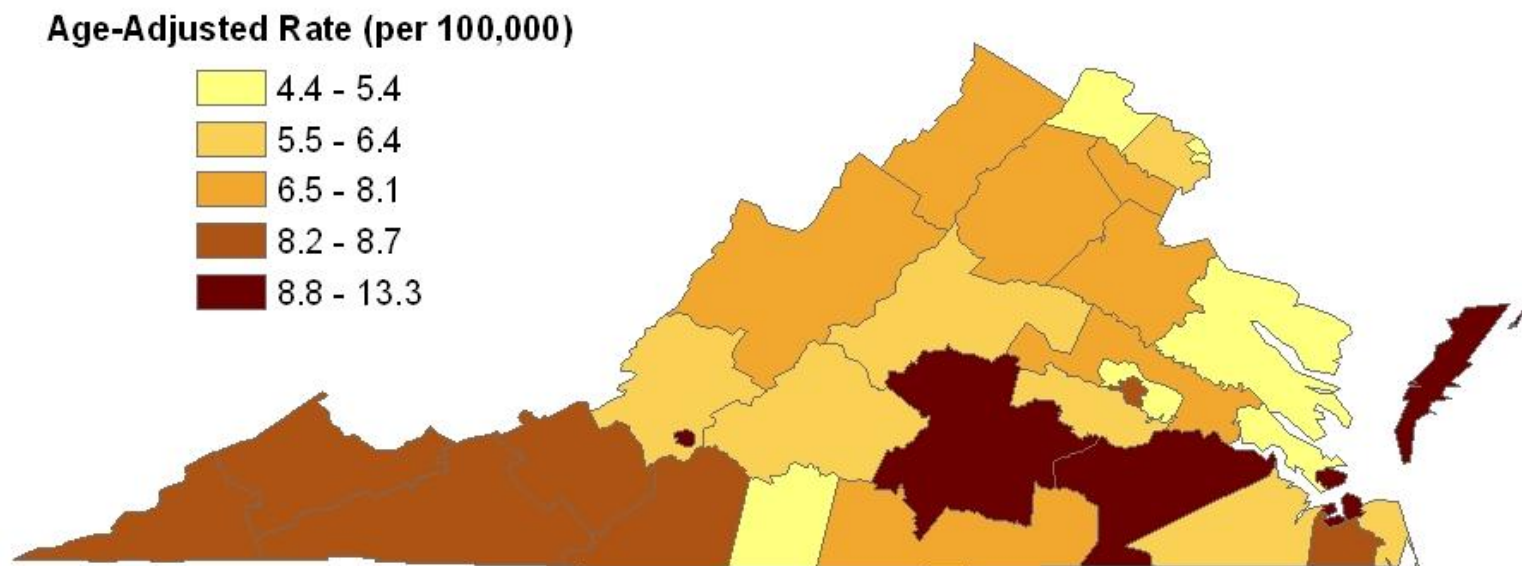
Maps illustrate rates or percentages in quantiles.

IV. Cancer Data By Health District  
Cervical Cancer Data By Health District

Health District	Incidence <sup>1</sup>				Staging <sup>2</sup>	Mortality <sup>3</sup>			Cervical Cancer Screening: Pap Test <sup>4</sup>		
	Count	Rate per 100,00	95% CI	Rank	Percent Local Stage	Count	Rate per 100,00	95% CI	Prevalence	95% CI	Rank
Alexandria	17	4.9	2.8 - 7.9	32	~	~	~	~	87.9%	68.9% - 95.9%	22
Alleghany	29	5.8	3.8 - 8.4	25	55%	7	~	~	86.5%	76.9% - 92.5%	19
Arlington	25	4.8	3.0 - 7.3	33	56%	~	~	~	91.1%	84.8% - 95.0%	33
Central Shenandoah	48	7.2	5.3 - 9.6	17	48%	13	~	~	73.1%	57.0% - 84.7%	2
Central Virginia	37	5.5	3.9 - 7.7	27	49%	19	~	~	77.8%	64.1% - 87.3%	8
Chesapeake	46	8.3	6.0 - 11.1	13	39%	16	~	~	89.5%	78.1% - 95.3%	26
Chesterfield	51	5.7	4.3 - 7.6	26	59%	9	~	~	88.4%	76.2% - 94.7%	24
Chickahominy	26	6.7	4.3 - 9.9	19	~	9	~	~	90.9%	82.0% - 95.6%	31
Crater	38	9.7	6.8 - 13.3	5	47%	9	~	~	89.7%	82.2% - 94.3%	27
Cumberland Plateau	28	8.7	5.7 - 12.8	8	39%	11	~	~	77.5%	65.8% - 86.0%	6
Eastern Shore	19	13.3	7.7 - 21.4	1	~	5	~	~	77.9%	67.9% - 85.5%	9
Fairfax	175	6.4	5.5 - 7.4	23	49%	42	1.5	1.0 - 2.0	83.2%	66.9% - 92.4%	14
Hampton	33	9.2	6.3 - 12.9	6	55%	5	~	~	90.9%	84.7% - 94.8%	31
Henrico	36	4.5	3.1 - 6.2	34	50%	20	~	~	91.1%	85.0% - 94.9%	33
Lenowisco	20	8.5	5.1 - 13.2	11	~	7	~	~	87.5%	79.9% - 92.5%	21
Lord Fairfax	36	6.5	4.5 - 9.1	20	~	17	~	~	81.5%	69.9% - 89.3%	12
Loudoun	34	5.4	3.6 - 7.7	29	59%	9	~	~	81.4%	59.9% - 92.8%	11
Mount Rogers	44	8.5	6.1 - 11.6	10	57%	9	~	~	67.0%	53.6% - 78.1%	1
New River	33	8.7	5.9 - 12.2	9	67%	15	~	~	87.3%	76.2% - 93.6%	20
Norfolk	53	10.0	7.5 - 13.1	3	30%	25	~	~	83.8%	74.7% - 90.0%	15
Peninsula	45	5.1	3.7 - 6.8	30	60%	13	~	~	85.2%	74.1% - 92.0%	17
Piedmont	23	9.1	5.6 - 13.8	7	48%	12	~	~	76.8%	62.2% - 86.9%	5
Pittsylvania/Danville	18	4.9	2.9 - 8.0	31	~	9	~	~	75.1%	63.3% - 84.1%	4
Portsmouth	28	10.4	6.9 - 15.1	2	50%	11	~	~	90.7%	84.3% - 94.6%	29
Prince William	64	6.9	5.2 - 8.9	18	50%	24	~	~	92.2%	81.4% - 97.0%	34
Rappahannock	59	7.8	5.9 - 10.1	16	42%	23	~	~	82.0%	71.8% - 89.1%	13
Rappahannock/Rapidan	28	6.5	4.3 - 9.4	21	39%	~	~	~	80.5%	70.0% - 87.9%	10
Richmond City	43	8.4	6.0 - 11.4	12	40%	17	~	~	90.3%	84.2% - 94.2%	28
Roanoke	25	9.8	6.2 - 14.6	4	52%	8	~	~	77.6%	64.2% - 87.0%	7
Southside	19	8.1	4.7 - 13.0	15	~	12	~	~	84.1%	75.5% - 90.1%	16
Thomas Jefferson	31	5.4	3.6 - 7.7	28	39%	13	~	~	88.5%	78.4% - 94.2%	25
Three Rivers	18	4.4	2.5 - 7.2	35	~	9	~	~	88.3%	77.6% - 94.3%	23
Virginia Beach	70	6.4	5.0 - 8.1	22	46%	29	2.7	1.7 - 3.7	86.5%	78.1% - 92.0%	19
West Piedmont	33	8.2	5.5 - 11.7	14	33%	11	~	~	75.0%	56.9% - 87.2%	3
Western Tidewater	24	6.2	4.0 - 9.3	24	~	10	~	~	94.5%	90.1% - 97.0%	35
VIRGINIA	1,356	6.7	6.4 - 7.1		46%	460	2.2	2.0 - 2.4	84.2%	81.9% - 86.3%	

#### IV. Cancer Data By Health District

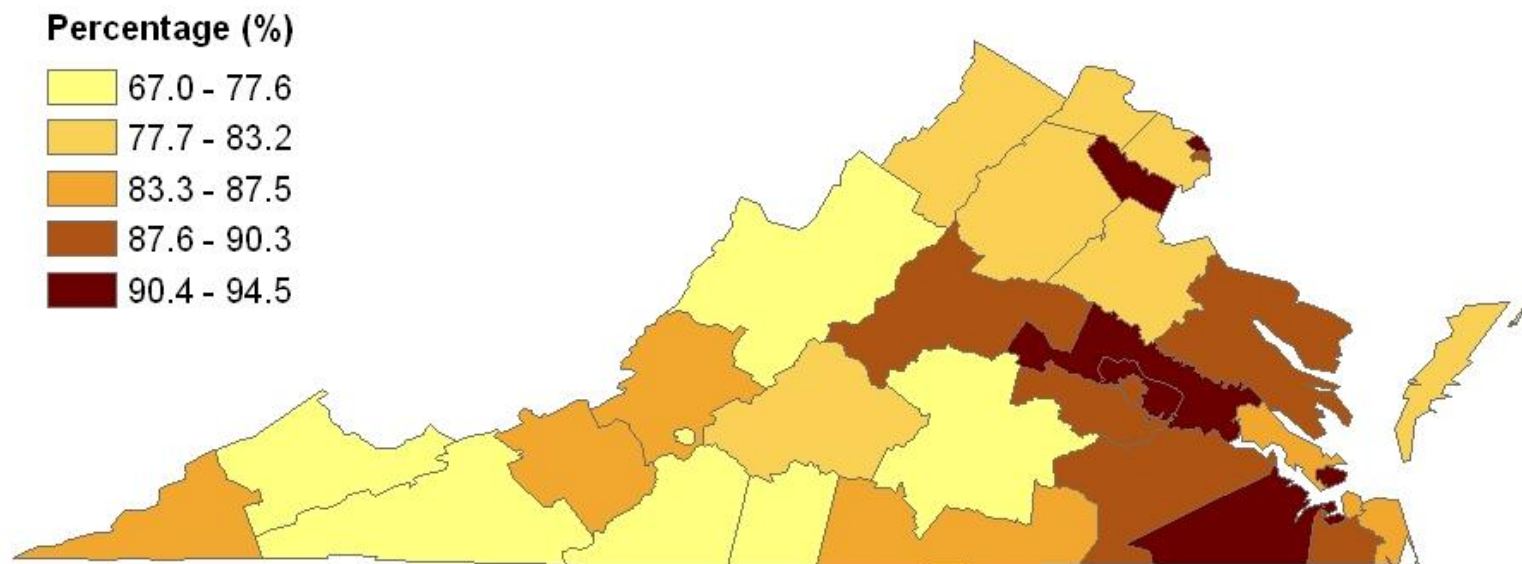
### Cancer Incidence Rate by Health District, Cervix, Virginia, 2004-2008



Source: Virginia Cancer Registry, Virginia Department of Health.  
Rates are age-adjusted to the 2000 U.S. standard population.

#### IV. Cancer Data By Health District

### Pap Smear in the Past Three Years by Health District, Women 18 and Older, Virginia, 2006-2008



Source: Virginia Behavioral Risk Factor Surveillance System. Percentages are weighted.

#### IV. Cancer Data By Health District

**Sources:** Incidence and percent local staging (VA Cancer Registry); mortality (VDH Division of Health Statistics); screening prevalence (Behavioral Risk Factor Surveillance System).

<sup>1</sup>Based on combined 2004-2008 data. Rates are age- adjusted to the 2000 U.S. standard population. Districts are ranked in terms of incidence rates from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher incidence rates) are at greater risk.

<sup>2</sup>Based on combined 2004-2008 data. Percentage of Local Stage cancers are reported using the Summary Staging System. Districts are ranked in terms of percentage of cases diagnosed early (local) from lowest (=1) to highest (=35). Districts with lower rankings (i.e. lower early stage percentages) are at greater risk.

<sup>3</sup>Based on combined 2005-2009 data. Rates are age- adjusted to the 2000 U.S. standard population. Districts are ranked in terms of mortality rates from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher mortality rates) are at greater risk.

~Incidence count is not reported if >0 and <11. Incidence rate is not reported if fewer than 16 cases. Percent local stage is not reported if reflects a count >0 and <11. Mortality rate is not reported if 25 or fewer deaths. Death count is not reported if >0 and <5.

<sup>4</sup>Behavioral Risk Factor Surveillance System is a national telephone survey of adults 18+. Estimates are based on 2006 and 2008 (pooled) data. Percentages are population-weighted. Cervical Cancer Screening = Percentage of women age 18 years and older reporting having a Pap test in past three years. Women who had a hysterectomy are excluded. Districts are ranked in terms of prevalence of Pap test from lowest (=1) to highest (=35). District with lower rankings (i.e. lower Pap screening prevalence) are at greater risk. Maps illustrate rates or percentages in quantiles. Staging and mortality maps for cervical cancer are not presented due to low numbers.



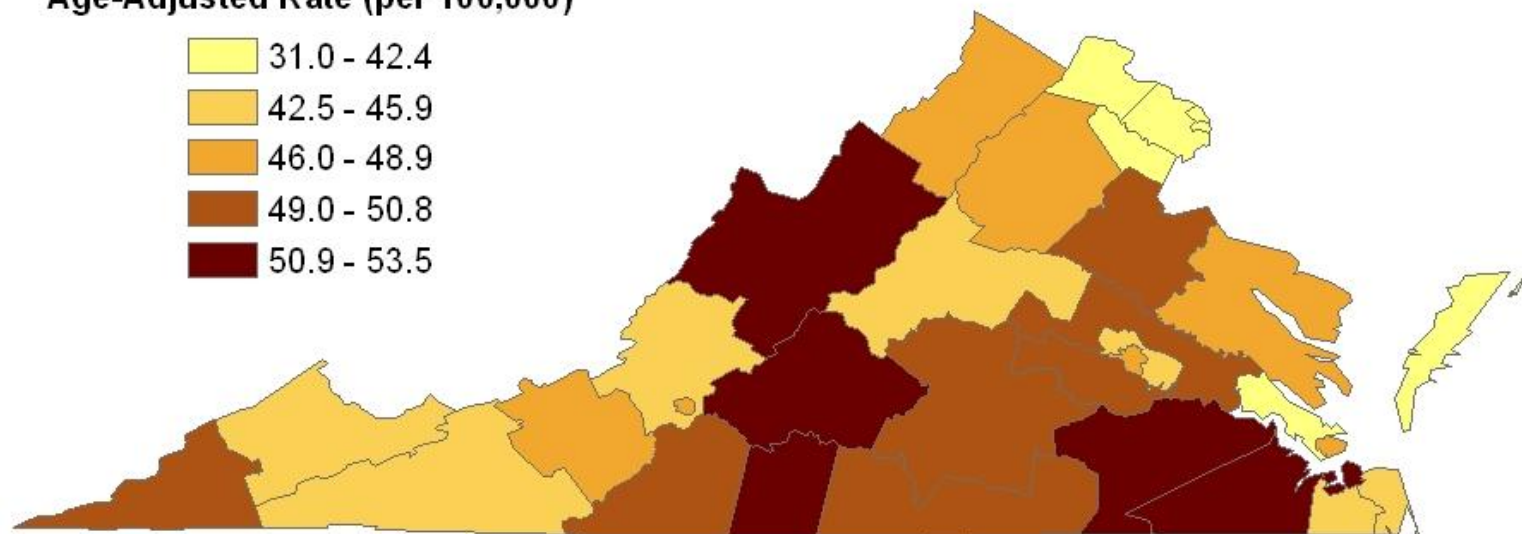
**IV. Cancer Data By Health District**  
**Colorectal Cancer Data By Health District**

Health District	Incidence <sup>1</sup>				Staging <sup>2</sup>		Mortality <sup>3</sup>				Cancer Screening <sup>4</sup>		
	Count	Rate per 100,00	95% CI	Rank	Percent Local Stage	Rank	Count	Rate per 100,00	95% CI	Rank	Colon Cancer Screening (comb.) Prevalence	95% CI	Rank
Alexandria	205	31.0	26.8 - 35.7	35	39%	16	80	12.2	9.5 - 14.9	35	65.1%	53.0% - 75.6%	29
Alleghany	508	45.9	41.9 - 50.1	22	40%	20	192	17.0	14.6 - 19.4	21	63.0%	55.4% - 70.0%	22
Arlington	306	36.5	32.4 - 41.0	33	34%	1	106	13.0	10.5 - 15.5	33	62.7%	51.8% - 72.5%	21
Central Shenandoah	796	51.2	47.7 - 55.0	7	39%	14	259	16.0	14.1 - 17.9	26	69.4%	61.0% - 76.8%	32
Central Virginia	764	53.5	49.7 - 57.4	1	42%	27	269	18.2	16.0 - 20.4	14	59.0%	50.8% - 66.8%	15
Chesapeake	421	44.5	40.3 - 49.1	26	42%	28	185	20.1	17.2 - 23.0	6	60.8%	47.4% - 72.8%	19
Chesterfield	667	50.8	46.8 - 55.1	8	35%	3	269	21.5	18.9 - 24.1	2	55.6%	46.1% - 64.7%	10
Chickahominy	369	50.6	45.5 - 56.2	12	36%	4	124	17.0	14.0 - 20.0	21	60.5%	52.2% - 68.1%	17
Crater	414	51.3	46.5 - 56.6	5	37%	6	164	20.8	17.6 - 24.0	4	54.5%	46.4% - 62.5%	8
Cumberland Plateau	315	44.6	39.7 - 49.9	25	41%	25	122	17.4	14.3 - 20.5	20	52.3%	44.3% - 60.2%	4
Eastern Shore	138	39.3	32.9 - 46.6	31	35%	2	66	19.0	14.4 - 23.6	10	60.6%	52.8% - 67.9%	18
Fairfax	1,669	36.9	35.1 - 38.7	32	41%	23	541	12.4	11.4 - 13.4	34	79.2%	69.7% - 86.2%	35
Hampton	318	47.2	42.1 - 52.7	20	45%	32	134	20.6	17.1 - 24.1	5	74.5%	65.7% - 81.7%	34
Henrico	670	45.8	42.3 - 49.4	23	42%	29	256	16.8	14.7 - 18.9	23	64.6%	55.9% - 72.5%	27
Lenowisco	279	50.8	45.0 - 57.3	8	38%	12	101	17.9	14.4 - 21.4	18	47.0%	38.9% - 55.4%	1
Lord Fairfax	552	46.8	43.0 - 50.9	21	37%	8	222	18.6	16.2 - 21.0	12	63.8%	56.1% - 70.9%	24
Loudoun	288	36.1	31.7 - 40.9	34	42%	26	127	16.1	13.3 - 18.9	25	65.3%	52.7% - 76.1%	30
Mount Rogers	585	45.4	41.7 - 49.3	24	37%	9	212	16.2	14.0 - 18.4	24	53.5%	45.5% - 61.3%	6
New River	399	48.2	43.5 - 53.2	18	45%	31	157	19.0	16.0 - 22.0	10	51.8%	43.7% - 59.8%	2
Norfolk	502	51.3	46.9 - 56.0	6	39%	17	197	19.8	17.0 - 22.6	7	66.8%	58.9% - 73.9%	31
Peninsula	715	42.4	39.3 - 45.6	29	41%	24	264	15.5	13.6 - 17.4	30	63.1%	54.8% - 70.7%	23
Piedmont	309	50.6	45.1 - 56.7	11	38%	10	118	19.1	15.7 - 22.5	9	55.3%	46.7% - 63.6%	9
Pittsylvania/Danville	371	52.9	47.6 - 58.7	2	44%	30	113	16.0	13.0 - 19.0	26	57.8%	49.4% - 65.8%	13
Portsmouth	267	51.6	45.6 - 58.2	3	39%	15	117	22.6	18.5 - 26.7	1	65.1%	57.3% - 72.1%	29
Prince William	526	41.7	37.9 - 45.8	30	40%	21	198	15.9	13.7 - 18.1	28	62.6%	51.7% - 72.4%	20
Rappahannock	586	49.3	45.2 - 53.6	14	39%	19	213	18.5	16.0 - 21.0	13	54.4%	45.1% - 63.4%	7
Rappahannock/Rapidan	414	48.2	43.6 - 53.2	17	50%	35	153	17.9	15.1 - 20.7	18	58.0%	49.5% - 66.0%	14
Richmond City	507	47.7	43.6 - 52.1	19	38%	11	200	18.2	15.7 - 20.7	14	60.3%	51.1% - 68.8%	16
Roanoke	283	48.6	43.0 - 54.8	16	41%	22	115	18.0	14.7 - 21.3	17	53.5%	44.9% - 61.8%	6
Southside	288	49.5	43.8 - 55.7	13	36%	5	95	15.9	12.7 - 19.1	28	52.0%	44.4% - 59.6%	3
Thomas Jefferson	531	44.2	40.5 - 48.1	27	46%	33	184	15.0	12.8 - 17.2	31	56.4%	48.7% - 63.8%	12
Three Rivers	492	48.9	44.6 - 53.6	15	37%	7	198	19.6	16.9 - 22.3	8	64.0%	56.4% - 71.0%	26
Virginia Beach	802	43.1	40.2 - 46.3	28	39%	13	267	14.5	12.8 - 16.2	32	72.3%	63.9% - 79.4%	33
West Piedmont	465	50.7	46.2 - 55.7	10	47%	34	165	18.1	15.3 - 20.9	16	55.9%	48.0% - 63.6%	11
Western Tidewater	371	51.5	46.3 - 57.0	4	39%	18	153	21.0	17.7 - 24.3	3	64.0%	55.4% - 71.9%	26
VIRGINIA	17,092	45.1	44.5 - 45.8		40%		6,336	16.7	16.3 - 17.1		62.9%	61.1% - 64.7%	

#### IV. Cancer Data By Health District

### Cancer Incidence Rate by Health District, Colon and Rectum, Virginia, 2004-2008

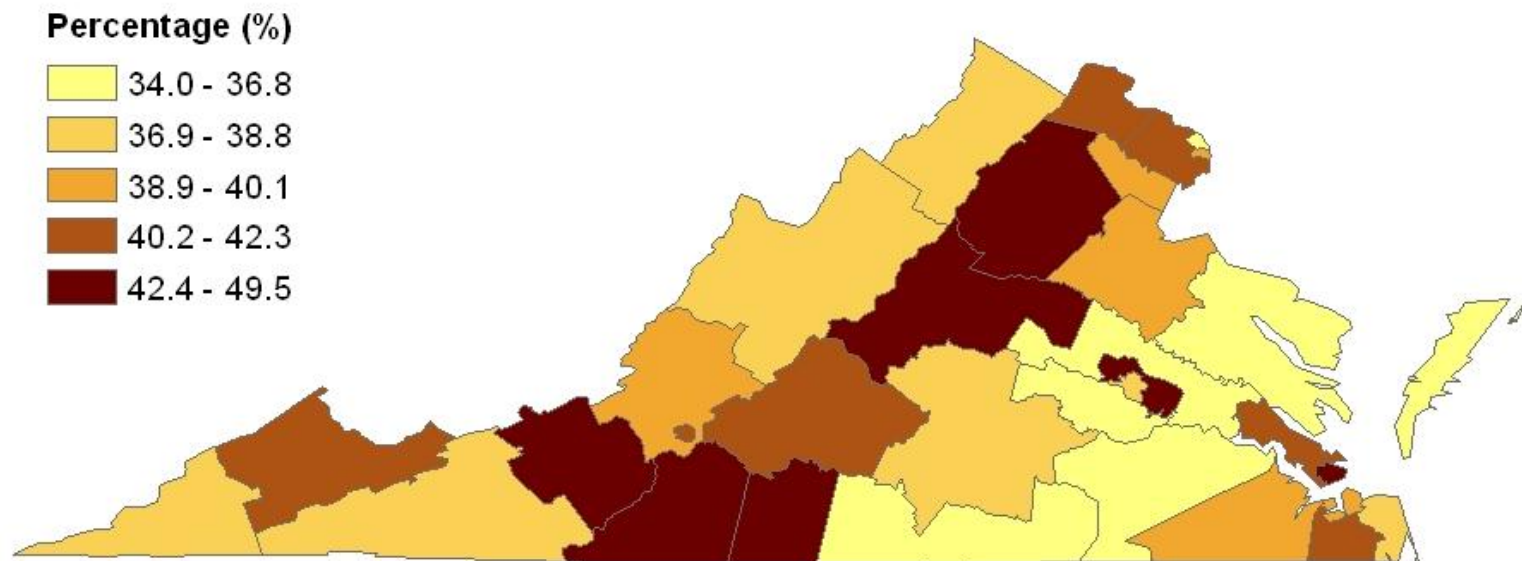
#### Age-Adjusted Rate (per 100,000)



Source: Virginia Cancer Registry, Virginia Department of Health.  
Rates are age-adjusted to the 2000 U.S. standard population.

#### IV. Cancer Data By Health District

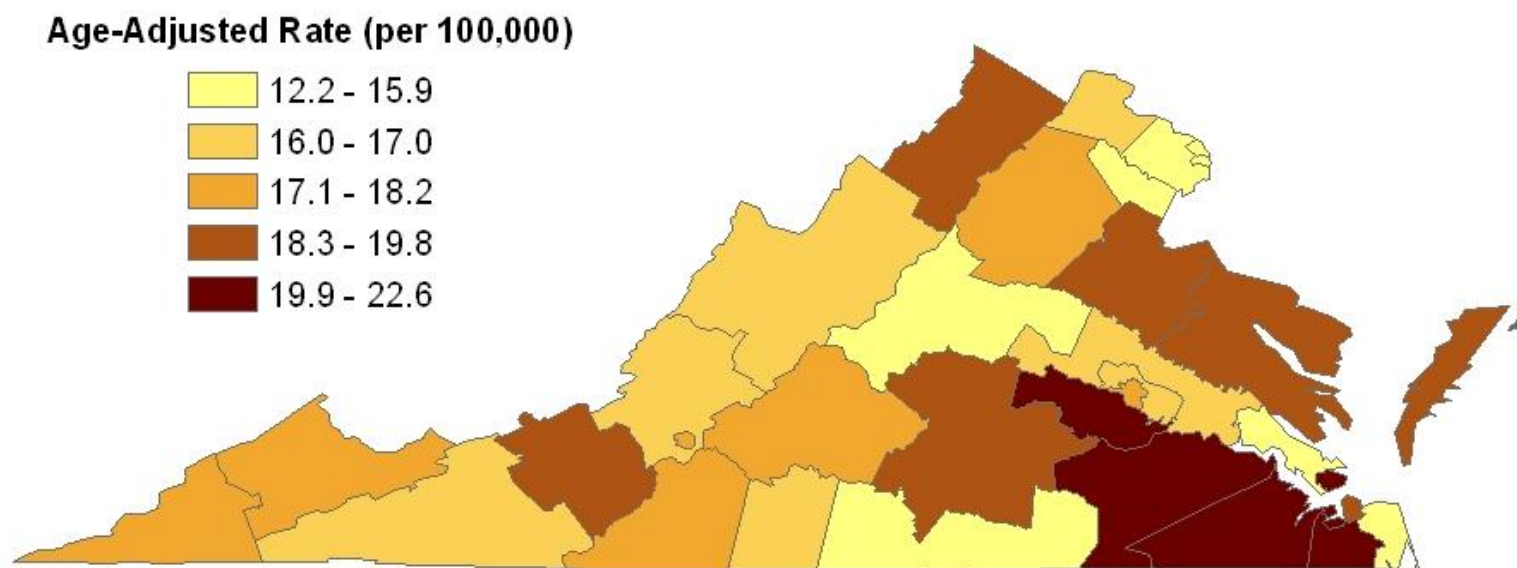
Percentage of Colon and Rectum Cancer Cases Diagnosed at Local Stage  
by Health District, Virginia, 2004-2008



Source: Virginia Cancer Registry, Virginia Department of Health.

#### IV. Cancer Data By Health District

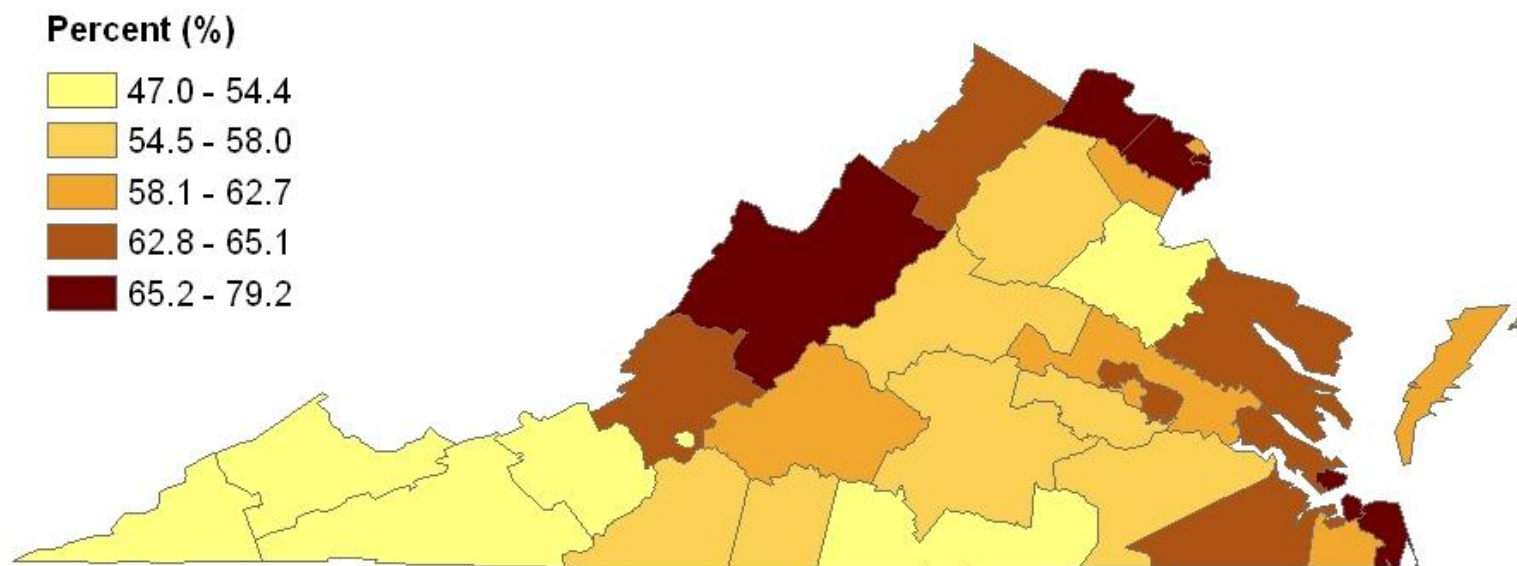
### Cancer Mortality Rate by Health District, Colon and Rectum, Virginia, 2005-2009



Source: Division of Health Statistics, Virginia Department of Health.  
Rates are age-adjusted to the 2000 U.S. standard population.

#### IV. Cancer Data By Health District

### Colorectal Cancer Screening by Health District, Adults 50 and Older, Virginia, 2006-2008



Source: Virginia Behavioral Risk Factor Surveillance System. Percentages are weighted.  
"Colorectal cancer screening" refers to adults 50 and older who had either endoscopy (sigmoidoscopy, colonoscopy) within the past five years or a home blood stool test in the past year.

#### IV. Cancer Data By Health District

**Sources:** Incidence and percent local staging (VA Cancer Registry); mortality (VDH Division of Health Statistics); screening prevalence (Behavioral Risk Factor Surveillance System).

<sup>1</sup>Based on combined 2004-2008 data. Rates are age- adjusted to the 2000 U.S. standard population. Districts are ranked in terms of incidence rates from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher incidence rates) are at greater risk.

<sup>2</sup>Based on combined 2004-2008 data. Percentage of Local Stage cancers are reported using the Summary Staging System. Districts are ranked in terms of percentage of cases diagnosed early (local) from lowest (=1) to highest (=35). Districts with lower rankings (i.e. lower early stage percentages) are at greater risk.

<sup>3</sup>Based on combined 2005-2009 data. Rates are age- adjusted to the 2000 U.S. standard population. Districts are ranked in terms of mortality rates from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher mortality rates) are at greater risk.

<sup>4</sup>Behavioral Risk Factor Surveillance System is a national telephone survey of adults 18+. Colorectal cancer screening = Percentage of adults 50 and older who reported having a sigmoidoscopy/colonoscopy within the past 5 years and/or a home blood stool test within the past year. Based on 2006 and 2008 data (pooled). Percentages are population-weighted. Districts are ranked in terms of prevalence of colorectal screening from lowest (=1) to highest (=35). Districts with lower rankings (i.e. lower screening prevalence) are at greater risk.

Top five districts with the highest risk (i.e. lowest ranks) are highlighted.

Maps illustrate rates or percentages in quantiles.

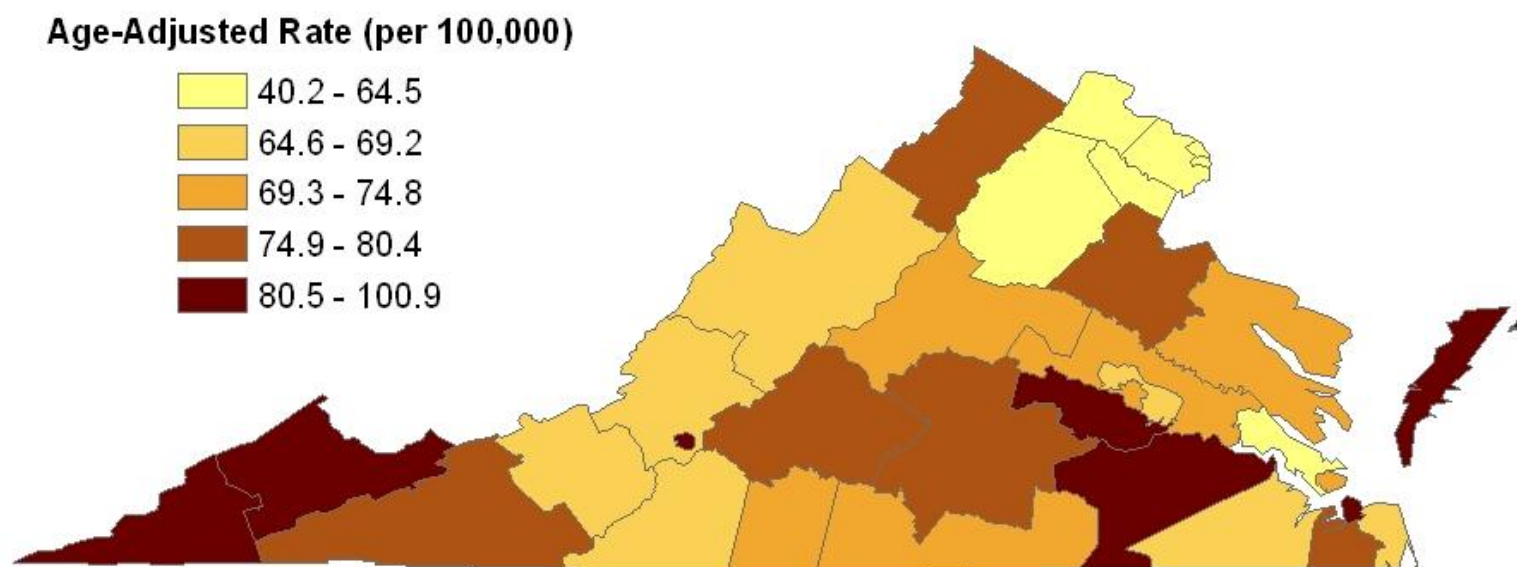
**IV. Cancer Data By Health District**  
**Lung and Bronchus Cancer Data By Health District**

Health District	Incidence <sup>1</sup>				Staging <sup>2</sup>		Mortality <sup>3</sup>				Risk Factor: Current Smoking <sup>4</sup>		
	Count	Rate per 100,00	95% CI	Rank	Percent Local Stage	Rank	Count	Rate per 100,00	95% CI	Rank	Prevalence	95% CI	Rank
Alexandria	250	40.2	35.3 - 45.7	35	16%	14	185	28.7	24.6 - 32.8	35	8.4%	4.0% - 16.6%	35
Alleghany	730	65.5	60.8 - 70.5	28	17%	20	572	50.3	46.2 - 54.4	28	17.3%	12.6% - 23.2%	23
Arlington	352	43.7	39.1 - 48.7	34	13%	1	258	31.9	28.0 - 35.8	34	13.9%	9.1% - 20.8%	32
Central Shenandoah	1,051	66.4	62.4 - 70.6	26	22%	32	790	48.8	45.4 - 52.2	30	13.1%	9.7% - 17.5%	33
Central Virginia	1,171	80.1	75.6 - 84.9	9	18%	25	906	60.8	56.8 - 64.8	11	17.9%	14.1% - 22.5%	21
Chesapeake	730	79.3	73.6 - 85.4	10	23%	35	581	62.1	57.1 - 67.1	10	15.7%	11.6% - 21.0%	28
Chesterfield	1,163	88.8	83.5 - 94.3	5	15%	6	861	65.4	61.0 - 69.8	5	16.8%	12.6% - 22.1%	24
Chickahominy	541	74.5	68.3 - 81.2	16	17%	18	421	57.7	52.2 - 63.2	20	19.6%	13.5% - 27.5%	18
Crater	738	92.2	85.7 - 99.2	2	14%	3	582	72.7	66.8 - 78.6	3	23.4%	18.7% - 28.9%	8
Cumberland Plateau	641	89.0	82.2 - 96.3	4	20%	29	484	66.6	60.7 - 72.5	4	24.1%	19.1% - 29.9%	7
Eastern Shore	311	88.1	78.5 - 98.6	6	14%	4	265	73.9	65.0 - 82.8	2	22.1%	17.5% - 27.5%	12
Fairfax	2,045	47.6	45.5 - 49.7	32	18%	26	1,456	33.6	31.9 - 35.3	33	9.1%	5.0% - 16.1%	34
Hampton	493	73.0	66.7 - 79.8	18	16%	12	401	58.8	53.0 - 64.6	18	17.6%	13.5% - 22.7%	22
Henrico	987	68.5	64.2 - 72.9	24	18%	24	786	52.8	49.1 - 56.5	24	15.9%	11.4% - 21.7%	27
Lenowisco	583	100.9	92.8 - 109.5	1	17%	15	438	75.9	68.8 - 83.0	1	31.2%	24.7% - 38.6%	1
Lord Fairfax	892	74.9	70.1 - 80.1	14	18%	23	710	58.6	54.3 - 62.9	19	23.2%	18.2% - 29.1%	9
Loudoun	326	44.7	39.7 - 50.1	33	18%	22	298	39.7	35.2 - 44.2	32	15.1%	7.8% - 27.1%	29
Mount Rogers	989	75.4	70.7 - 80.3	13	22%	34	842	63.3	59.0 - 67.6	8	28.6%	23.0% - 34.9%	3
New River	556	66.2	60.8 - 72.0	27	17%	16	457	54.1	49.1 - 59.1	23	22.3%	17.2% - 28.5%	11
Norfolk	803	83.4	77.7 - 89.4	7	15%	9	606	62.5	57.5 - 67.5	9	21.0%	16.1% - 26.9%	13
Peninsula	1,063	62.9	59.1 - 66.8	31	22%	33	825	47.8	44.5 - 51.1	31	14.3%	10.5% - 19.2%	31
Piedmont	463	75.4	68.7 - 82.7	12	16%	10	375	59.9	53.8 - 66.0	13	23.2%	18.0% - 29.4%	9
Pittsylvania/Danville	524	72.7	66.6 - 79.3	19	15%	5	414	57.0	51.5 - 62.5	21	20.1%	15.5% - 25.7%	17
Portsmouth	404	78.4	70.9 - 86.5	11	16%	11	337	65.2	58.2 - 72.2	6	20.9%	16.0% - 27.0%	14
Prince William	748	64.5	59.6 - 69.6	29	17%	21	595	49.0	45.1 - 52.9	29	19.6%	12.6% - 29.1%	18
Rappahannock	925	80.4	75.2 - 85.9	8	20%	30	700	59.2	54.8 - 63.6	17	20.7%	15.6% - 27.1%	15
Rappahannock/Rapidan	550	63.0	57.8 - 68.6	30	19%	27	455	51.2	46.5 - 55.9	26	16.8%	12.9% - 21.5%	24
Richmond City	778	74.8	69.6 - 80.4	15	15%	8	642	59.9	55.3 - 64.5	13	18.8%	14.2% - 24.6%	20
Roanoke	525	91.7	83.9 - 100.0	3	16%	13	386	64.7	58.2 - 71.2	7	27.4%	21.1% - 34.6%	4
Southside	428	70.8	64.2 - 77.9	20	15%	7	373	60.5	54.4 - 66.6	12	29.8%	23.9% - 36.4%	2
Thomas Jefferson	835	69.9	65.2 - 74.8	21	19%	28	629	51.2	47.2 - 55.2	26	14.5%	10.6% - 19.5%	30
Three Rivers	753	73.5	68.2 - 79.0	17	17%	17	615	59.3	54.6 - 64.0	16	24.7%	19.7% - 30.5%	6
Virginia Beach	1,254	68.7	64.9 - 72.6	23	21%	31	956	51.9	48.6 - 55.2	25	20.2%	15.7% - 25.7%	16
West Piedmont	638	67.1	62.0 - 72.6	25	17%	19	524	54.9	50.2 - 59.6	22	27.0%	21.2% - 33.6%	5
Western Tidewater	501	69.2	63.2 - 75.6	22	13%	2	438	59.4	53.8 - 65.0	15	16.0%	12.2% - 20.9%	26
VIRGINIA	25,741	68.4	67.6 - 69.3		18%		20,163	52.7	52.0 - 53.4		18.2%	17.1% - 19.4%	



#### IV. Cancer Data By Health District

### Cancer Incidence Rate by Health District, Lung and Bronchus, Virginia, 2004-2008

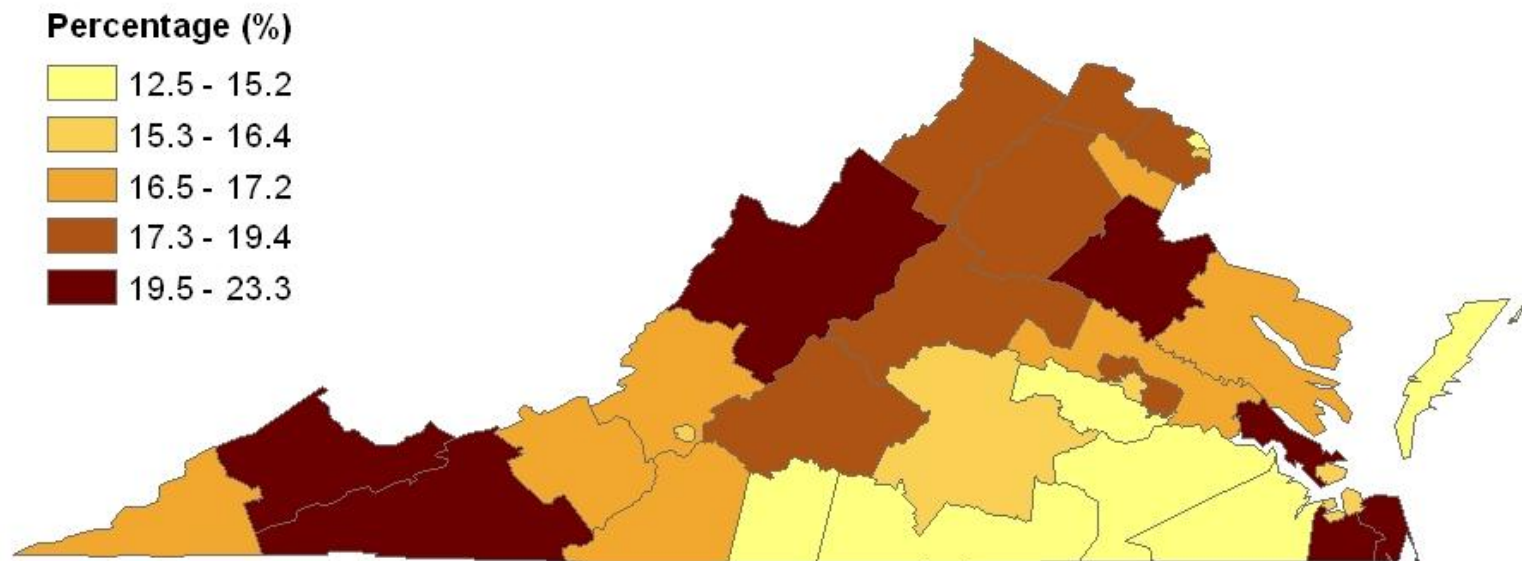


Source: Virginia Cancer Registry, Virginia Department of Health.  
Rates are age-adjusted to the 2000 U.S. standard population.



#### IV. Cancer Data By Health District

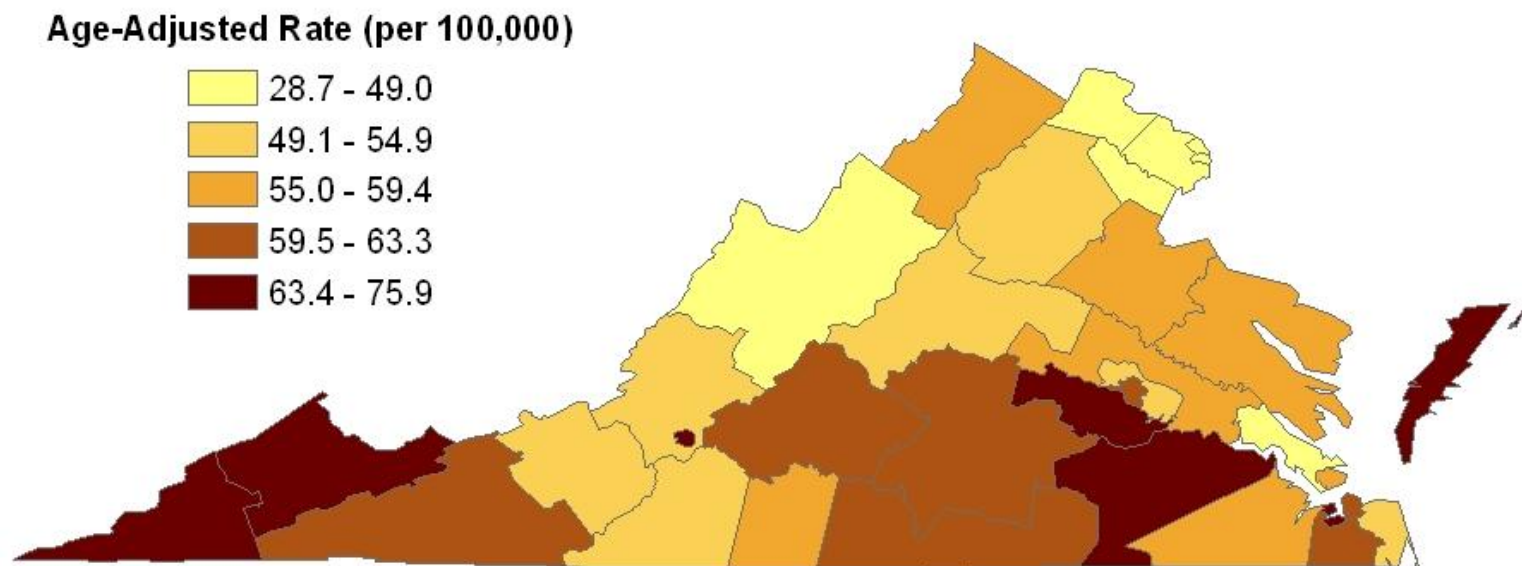
Percentage of Cancer Cases Diagnosed at Local Stage by Health District,  
Lung and Bronchus, Virginia, 2004-2008



Source: Virginia Cancer Registry, Virginia Department of Health.

#### IV. Cancer Data By Health District

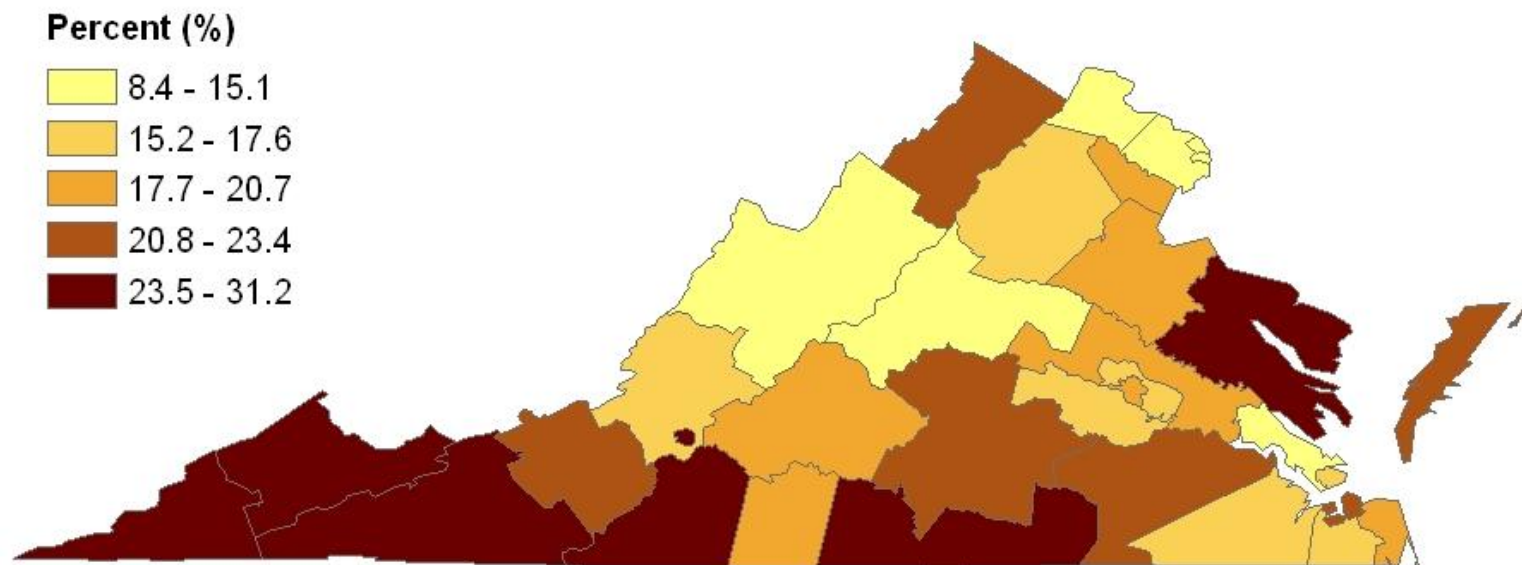
### Cancer Mortality Rate by Health District, Lung and Bronchus, Virginia, 2005-2009



Source: Division of Health Statistics, Virginia Department of Health.  
Rates are age-adjusted to the 2000 U.S. standard population.

#### IV. Cancer Data By Health District

Current Cigarette Smoking by Health District,  
Adults 18 and Older, Virginia, 2007-2009



Source: Virginia Behavioral Risk Factor Surveillance System. Percentages are weighted.

#### IV. Cancer Data By Health District

**Sources:** Incidence and percent local staging (VA Cancer Registry); mortality (VDH Division of Health Statistics); screening prevalence (Behavioral Risk Factor Surveillance System).

<sup>1</sup>Based on combined 2004-2008 data. Rates are age- adjusted to the 2000 U.S. standard population. Districts are ranked in terms of incidence rates from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher incidence rates) are at greater risk.

<sup>2</sup>Based on combined 2004-2008 data. Percentage of Local Stage cancers are reported using the Summary Staging System. Districts are ranked in terms of percentage of cases diagnosed early (local) from lowest (=1) to highest (=35). Districts with lower rankings (i.e. lower early stage percentages) are at greater risk.

<sup>3</sup>Based on combined 2005-2009 data. Rates are age- adjusted to the 2000 U.S. standard population. Districts are ranked in terms of mortality rates from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher mortality rates) are at greater risk.

<sup>4</sup>Behavioral Risk Factor Surveillance System is a national telephone survey of adults 18+. Estimates are based on 2007-2009 (pooled) data. Percentages are population-weighted. Current Smoking = Percentage of adults age 18 years and older reporting having smoked 100 or more cigarettes in their lifetime and currently smoking every day or some days. Districts are ranked in terms of prevalence of adult cigarette smoking from highest (=1) to lowest (=35). District with lower rankings (i.e. higher smoking prevalence) are at greater risk.

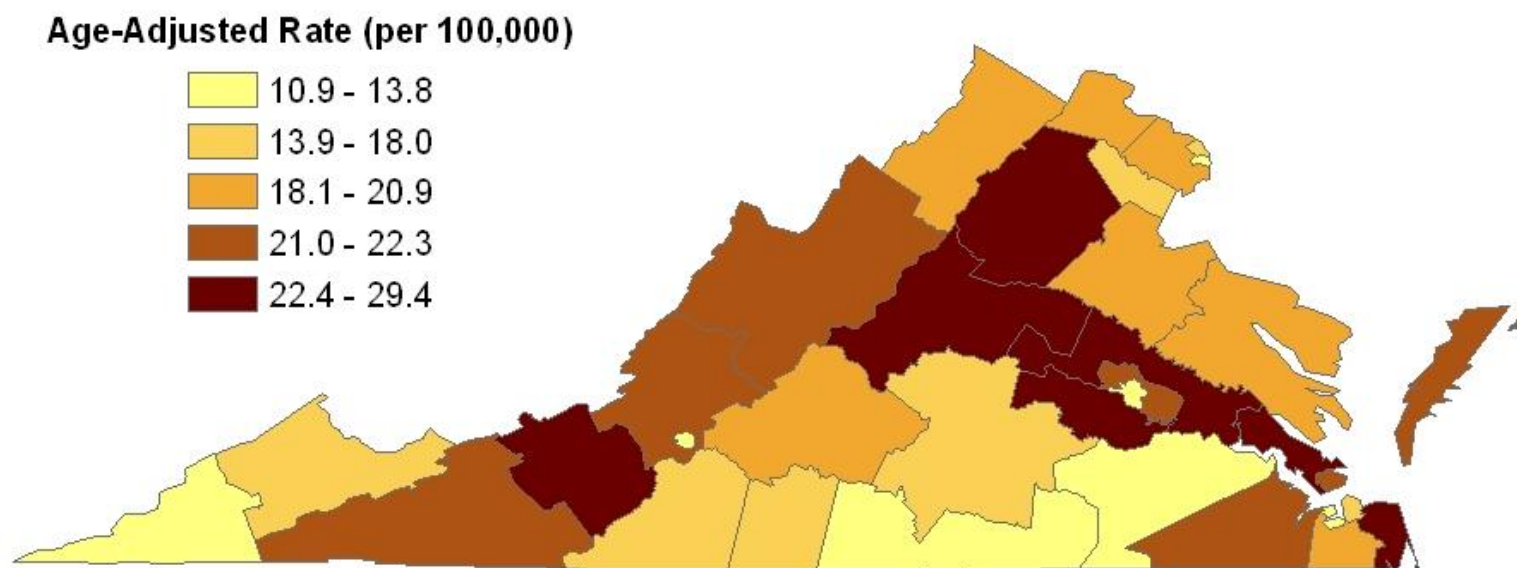
Maps illustrate rates or percentages in quantiles.

**IV. Cancer Data By Health District**  
**Melanoma Data By Health District**

Health District	Incidence <sup>1</sup>				Staging <sup>2</sup>		Mortality <sup>3</sup>			Risk Factor: Sunburn <sup>4</sup>		
	Count	Rate per 100,00	95% CI	Rank	Percent Local Stage	Rank	Count	Rate per 100,00	95% CI	Prevalence	95% CI	Rank
Alexandria	82	11.5	9.1 - 14.5	34	74%	16	12	~	~	26.3%	16.6% - 39.0%	29
Alleghany	216	21.5	18.6 - 24.6	12	83%	33	29	2.6	1.7 - 3.5	25.1%	17.3% - 34.9%	33
Arlington	167	18.0	15.3 - 21.2	22	55%	2	23	~	~	32.1%	20.2% - 46.8%	17
Central Shenandoah	323	21.9	19.5 - 24.4	10	60%	5	71	4.5	3.5 - 5.5	37.3%	27.7% - 47.9%	10
Central Virginia	289	20.8	18.4 - 23.4	16	79%	23	40	2.8	1.9 - 3.7	30.4%	20.9% - 41.9%	20
Chesapeake	210	20.4	17.7 - 23.5	17	62%	6	29	2.8	1.8 - 3.8	28.7%	19.0% - 40.8%	23
Chesterfield	433	29.4	26.5 - 32.4	1	78%	21	56	3.9	2.9 - 4.9	35.0%	25.3% - 46.2%	12
Chickahominy	173	23.0	19.6 - 26.8	5	80%	29	19	~	~	39.3%	29.6% - 49.8%	7
Crater	103	12.9	10.5 - 15.7	31	73%	12	18	~	~	29.7%	20.2% - 41.3%	21
Cumberland Plateau	110	16.8	13.8 - 20.4	24	80%	27	18	~	~	33.2%	23.5% - 44.6%	15
Eastern Shore	72	22.3	17.3 - 28.4	8	79%	25	11	~	~	27.3%	18.1% - 38.9%	28
Fairfax	1,012	20.4	19.1 - 21.8	18	58%	4	134	2.9	2.4 - 3.4	25.8%	16.6% - 37.9%	32
Hampton	147	21.2	17.9 - 24.9	14	86%	35	9	~	~	30.8%	20.1% - 44.0%	19
Henrico	312	21.3	19.0 - 23.8	13	79%	25	50	3.4	2.5 - 4.3	32.5%	23.2% - 43.5%	16
Lenowisco	69	12.7	9.8 - 16.1	32	74%	14	19	~	~	41.7%	31.6% - 52.6%	3
Lord Fairfax	231	20.0	17.5 - 22.8	19	54%	1	48	4.0	2.9 - 5.1	38.4%	28.2% - 49.8%	8
Loudoun	205	19.9	17.0 - 23.1	20	63%	7	17	~	~	44.1%	33.3% - 55.5%	2
Mount Rogers	255	22.0	19.3 - 25.0	9	78%	20	41	3.4	2.4 - 4.4	39.7%	29.7% - 50.6%	5
New River	183	22.9	19.6 - 26.5	6	74%	15	35	4.1	2.7 - 5.5	37.4%	27.2% - 48.9%	9
Norfolk	163	16.0	13.6 - 18.7	26	66%	10	23	~	~	28.2%	18.3% - 40.7%	26
Peninsula	482	28.5	26.0 - 31.2	4	78%	19	59	3.4	2.5 - 4.3	31.1%	21.4% - 42.9%	18
Piedmont	80	14.2	11.2 - 17.7	28	83%	32	18	~	~	25.9%	16.7% - 37.8%	31
Pittsylvania/Danville	106	17.3	14.0 - 21.0	23	80%	28	23	~	~	28.9%	19.3% - 40.9%	22
Portsmouth	56	10.9	8.3 - 14.2	35	57%	3	14	~	~	28.3%	19.2% - 39.5%	24
Prince William	253	16.3	14.2 - 18.7	25	64%	8	43	3.3	2.3 - 4.3	39.9%	26.9% - 54.5%	4
Rappahannock	248	18.5	16.2 - 21.0	21	67%	11	43	3.4	2.4 - 4.4	44.8%	33.1% - 57.1%	1
Rappahannock/Rapidan	198	22.4	19.4 - 25.9	7	66%	9	37	4.1	2.8 - 5.4	35.5%	27.0% - 45.1%	11
Richmond City	141	13.8	11.6 - 16.3	29	83%	34	18	~	~	20.7%	12.3% - 32.8%	35
Roanoke	76	13.6	10.7 - 17.2	30	76%	18	11	~	~	26.1%	16.8% - 38.0%	30
Southside	64	12.0	9.1 - 15.5	33	73%	13	16	~	~	34.1%	23.6% - 46.4%	13
Thomas Jefferson	333	28.6	25.6 - 31.9	3	80%	26	33	2.8	1.8 - 3.8	33.6%	24.7% - 43.9%	14
Three Rivers	189	20.9	17.9 - 24.3	15	78%	22	29	2.9	1.8 - 4.0	28.3%	18.7% - 40.4%	24
Virginia Beach	575	29.1	26.7 - 31.6	2	75%	17	63	3.3	2.5 - 4.1	25.1%	16.9% - 35.4%	33
West Piedmont	132	15.0	12.5 - 17.9	27	82%	31	23	~	~	27.9%	18.8% - 39.2%	27
Western Tidewater	160	21.8	18.5 - 25.5	11	81%	30	16	~	~	39.5%	30.2% - 49.6%	6
VIRGINIA	7,848	20.3	19.9 - 20.8		72%		1,148	3.0	2.8 - 3.2	32.4%	30.2% - 34.7%	

#### IV. Cancer Data By Health District

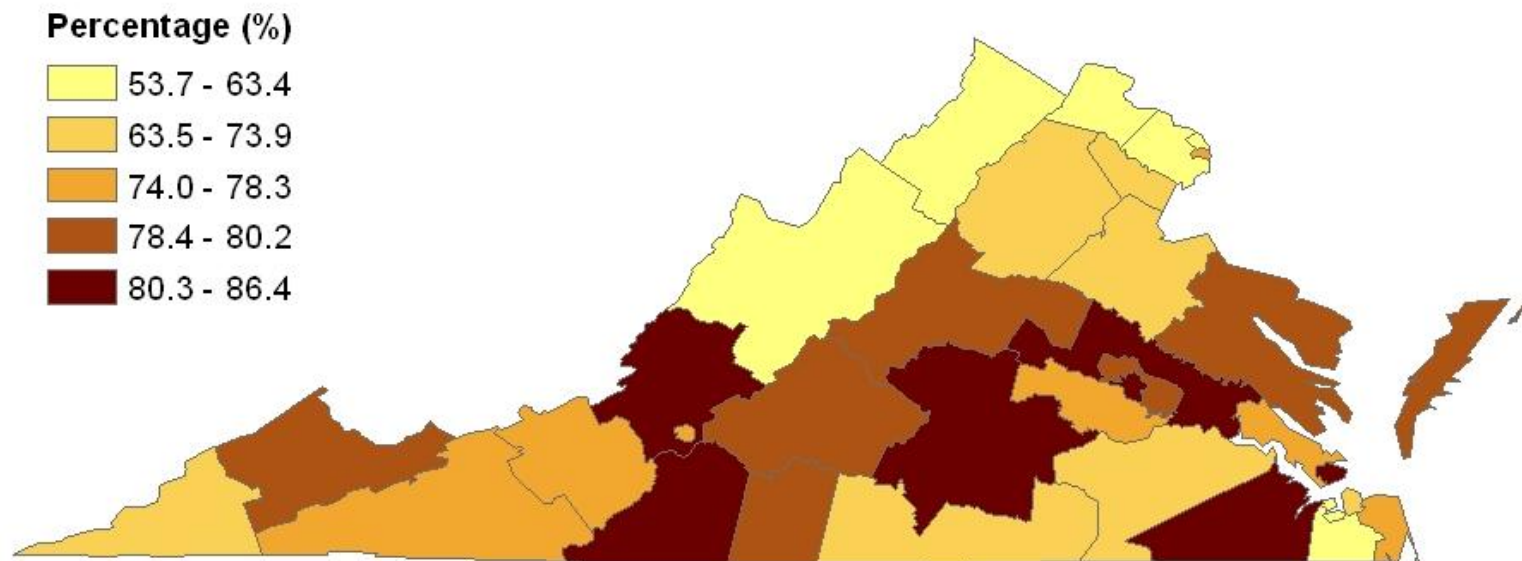
### Cancer Incidence Rate by Health District, Melanoma, Virginia, 2004-2008



Source: Virginia Cancer Registry, Virginia Department of Health.  
Rates are age-adjusted to the 2000 U.S. standard population.

#### IV. Cancer Data By Health District

Percentage of Cancer Cases Diagnosed at Local Stage by Health District,  
Melanoma, Virginia, 2004-2008

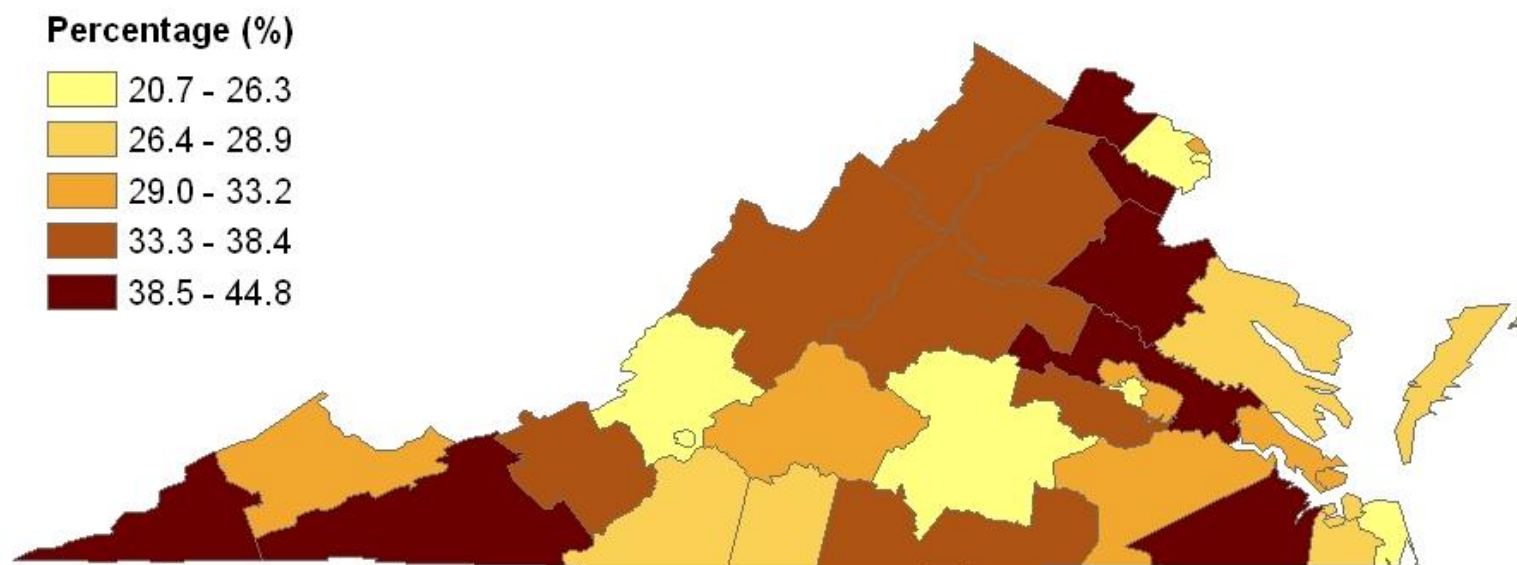


Source: Virginia Cancer Registry, Virginia Department of Health.



#### IV. Cancer Data By Health District

Previous Sunburn in the Past Twelve Months by Health District,  
Adults 18 and Older, Virginia, 2007



Source: Virginia Behavioral Risk Factor Surveillance System. Percentages are weighted.



#### IV. Cancer Data By Health District

**Sources:** Incidence and percent local staging (VA Cancer Registry); mortality (VDH Division of Health Statistics); screening prevalence (Behavioral Risk Factor Surveillance System).

<sup>1</sup>Based on combined 2004-2008 data. Rates are age- adjusted to the 2000 U.S. standard population. Districts are ranked in terms of incidence rates from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher incidence rates) are at greater risk.

<sup>2</sup> Based on combined 2004-2008 data. Percentage of Local Stage cancers are reported using the Summary Staging System. Districts are ranked in terms of percentage of cases diagnosed early (local) from lowest (=1) to highest (=35). Districts with lower rankings (i.e. lower early stage percentages) are at greater risk.

<sup>3</sup>Based on combined 2005-2009 data. Rates are age- adjusted to the 2000 U.S. standard population. Districts are ranked in terms of mortality rates from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher mortality rates) are at greater risk.

~ Mortality rate is not reported if 25 or fewer cases.

<sup>4</sup> Behavioral Risk Factor Surveillance System is a national telephone survey of adults 18+. Sunburn = Percentage of adults age 18 years and older reporting having a sunburn in the last 12 months. Based on 2007 data. Percentages are population-weighted. Districts are ranked in terms of prevalence of sunburn from highest (=1) to lowest (=35). District with lower rankings (i.e. higher sunburn percentages) are at greater risk.

Top five districts with the highest risk (i.e. lowest ranks) are highlighted.

Maps illustrate rates or percentages in quantiles. No map is presented for mortality due to small numbers.

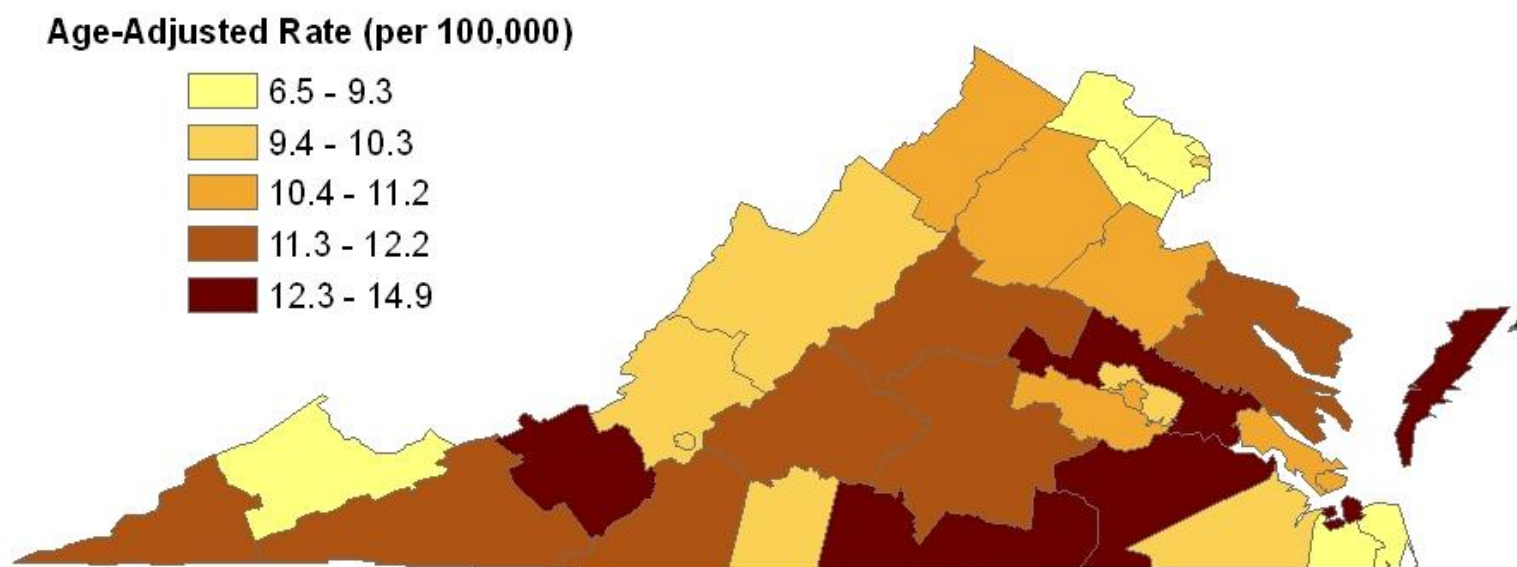
## IV. Cancer Data By Health District

### Oral Cavity Cancer Data By Health District

Health District	Incidence <sup>1</sup>				Staging <sup>2</sup>		Mortality <sup>3</sup>			Oral Cancer Screening and Risk Factors <sup>4</sup>					
	Count	Rate per 100,00	95% CI	Rank	Percent Local Stage	Rank	Count	Rate per 100,00	95% CI	Prevalence Smokeless Tobacco	95% CI	Rank	Prevalence Oral Cancer Check	95% CI	Rank
Alexandria	63	9.6	7.3 - 12.4	27	35%	25	17	~	~	0.6%	0.1% - 4.4%	32	50.4%	42.0% - 58.8%	30
Alleghany	112	10.3	8.5 - 12.5	22	32%	18	29	2.5	1.6 - 3.4	3.6%	1.8% - 6.8%	16	43.9%	36.9% - 51.1%	22
Arlington	77	8.7	6.8 - 10.9	33	38%	31	20	~	~	3.0%	1.0% - 8.5%	22	50.1%	42.5% - 57.7%	29
Central Shenandoah	147	9.6	8.1 - 11.3	26	36%	30	19	~	~	7.2%	4.2% - 12.1%	7	34.9%	28.1% - 42.4%	8
Central Virginia	163	11.5	9.8 - 13.5	12	40%	33	42	2.8	2.0 - 3.6	1.6%	0.6% - 4.1%	28	35.5%	28.7% - 43.0%	10
Chesapeake	96	9.2	7.4 - 11.2	30	27%	7	20	~	~	3.2%	1.1% - 8.9%	20	52.3%	41.7% - 62.6%	32
Chesterfield	175	11.2	9.5 - 13.1	16	26%	6	24	~	~	2.9%	1.4% - 5.9%	23	57.0%	49.5% - 64.2%	34
Chickahominy	102	12.6	10.2 - 15.4	7	42%	35	11	~	~	5.3%	2.8% - 10.0%	10	52.0%	44.5% - 59.3%	31
Crater	113	13.8	11.4 - 16.6	3	28%	10	29	3.5	2.2 - 4.8	3.5%	1.4% - 8.4%	18	35.4%	28.6% - 42.9%	9
Cumberland Plateau	46	6.5	4.7 - 8.7	35	30%	14	17	~	~	12.0%	8.1% - 17.2%	2	19.1%	13.8% - 25.8%	2
Eastern Shore	46	13.9	10.1 - 18.8	2	26%	5	17	~	~	1.3%	0.4% - 3.9%	30	34.6%	27.9% - 41.9%	7
Fairfax	448	8.9	8.1 - 9.8	31	29%	12	49	1.1	0.8 - 1.4	0.2%	0.0% - 1.5%	35	49.9%	41.1% - 58.6%	28
Hampton	76	10.9	8.6 - 13.7	18	30%	13	16	~	~	3.4%	1.2% - 9.3%	19	32.5%	25.2% - 40.7%	4
Henrico	146	9.8	8.3 - 11.5	25	35%	26	32	2.0	1.3 - 2.7	1.6%	0.6% - 4.3%	28	46.5%	38.8% - 54.3%	25
Lenowisco	67	12.2	9.4 - 15.5	9	33%	21	18	~	~	13.4%	8.4% - 20.8%	1	18.7%	13.6% - 25.3%	1
Lord Fairfax	128	10.7	8.9 - 12.8	20	34%	24	24	~	~	4.8%	2.5% - 8.9%	14	37.4%	30.5% - 44.8%	11
Loudoun	78	7.7	5.9 - 9.7	34	32%	17	21	~	~	7.6%	1.6% - 29.2%	6	61.5%	53.2% - 69.2%	35
Mount Rogers	145	11.9	10.0 - 14.0	10	36%	29	39	3.0	2.1 - 3.9	7.9%	4.3% - 14.4%	5	22.2%	16.7% - 28.8%	3
New River	108	12.6	10.3 - 15.3	6	26%	4	21	~	~	5.3%	3.1% - 9.0%	10	38.5%	31.2% - 46.4%	13
Norfolk	134	13.6	11.4 - 16.1	4	23%	2	37	3.7	2.5 - 4.9	1.3%	0.3% - 5.0%	30	39.2%	31.7% - 47.2%	14
Peninsula	182	10.6	9.1 - 12.2	21	35%	27	45	2.6	1.8 - 3.4	2.1%	0.9% - 4.9%	26	49.0%	41.0% - 56.9%	27
Piedmont	69	11.8	9.2 - 15.1	11	32%	16	18	~	~	3.6%	1.7% - 7.5%	16	33.9%	27.1% - 41.5%	6
Pittsylvania/Danville	67	9.8	7.6 - 12.6	24	36%	28	9	~	~	5.0%	2.7% - 9.2%	13	40.0%	32.6% - 47.9%	15
Portsmouth	77	14.9	11.8 - 18.7	1	21%	1	18	~	~	2.2%	1.0% - 4.7%	25	45.7%	38.8% - 52.7%	24
Prince William	141	9.3	7.7 - 11.2	29	33%	19	32	3.1	2.0 - 4.2	9.4%	3.2% - 24.2%	4	42.4%	34.8% - 50.3%	21
Rappahannock	144	11.0	9.2 - 13.0	17	33%	20	30	2.5	1.6 - 3.4	5.2%	2.3% - 11.3%	12	47.4%	39.0% - 55.9%	26
Rappahannock/Rapidan	96	10.9	8.8 - 13.4	19	28%	9	25	~	~	5.7%	3.1% - 10.1%	9	41.1%	33.9% - 48.7%	17
Richmond City	111	11.2	9.2 - 13.5	15	28%	8	32	3.1	2.0 - 4.2	2.1%	0.8% - 5.4%	26	42.1%	34.7% - 49.8%	19
Roanoke	53	9.5	7.0 - 12.5	28	34%	23	20	~	~	3.2%	1.5% - 6.5%	20	37.8%	30.7% - 45.5%	12
Southside	73	12.8	10.0 - 16.3	5	38%	32	15	~	~	5.8%	2.5% - 13.1%	8	33.6%	27.0% - 40.8%	5
Thomas Jefferson	137	11.4	9.6 - 13.5	13	33%	22	26	2.2	1.4 - 3.0	3.9%	2.0% - 7.5%	15	54.8%	47.5% - 61.9%	33
Three Rivers	115	11.4	9.4 - 13.8	13	41%	34	35	3.4	2.3 - 4.5	0.6%	0.1% - 2.9%	32	42.2%	35.1% - 49.7%	20
Virginia Beach	173	8.7	7.4 - 10.1	32	31%	15	30	1.6	1.0 - 2.2	0.4%	0.1% - 1.9%	34	45.5%	37.5% - 53.6%	23
West Piedmont	110	12.2	10.0 - 14.8	8	29%	11	15	~	~	10.7%	6.1% - 18.1%	3	41.1%	33.3% - 49.3%	17
Western Tidewater	77	10.2	8.0 - 12.8	23	25%	3	15	~	~	2.9%	1.2% - 6.8%	23	41.7%	34.4% - 49.4%	18
VIRGINIA	4,095	10.4	10.1 - 10.7		32%		867	2.2	2.1 - 2.3	4.1%	3.3% - 5.0%		43.4%	41.7% - 45.1%	

#### IV. Cancer Data By Health District

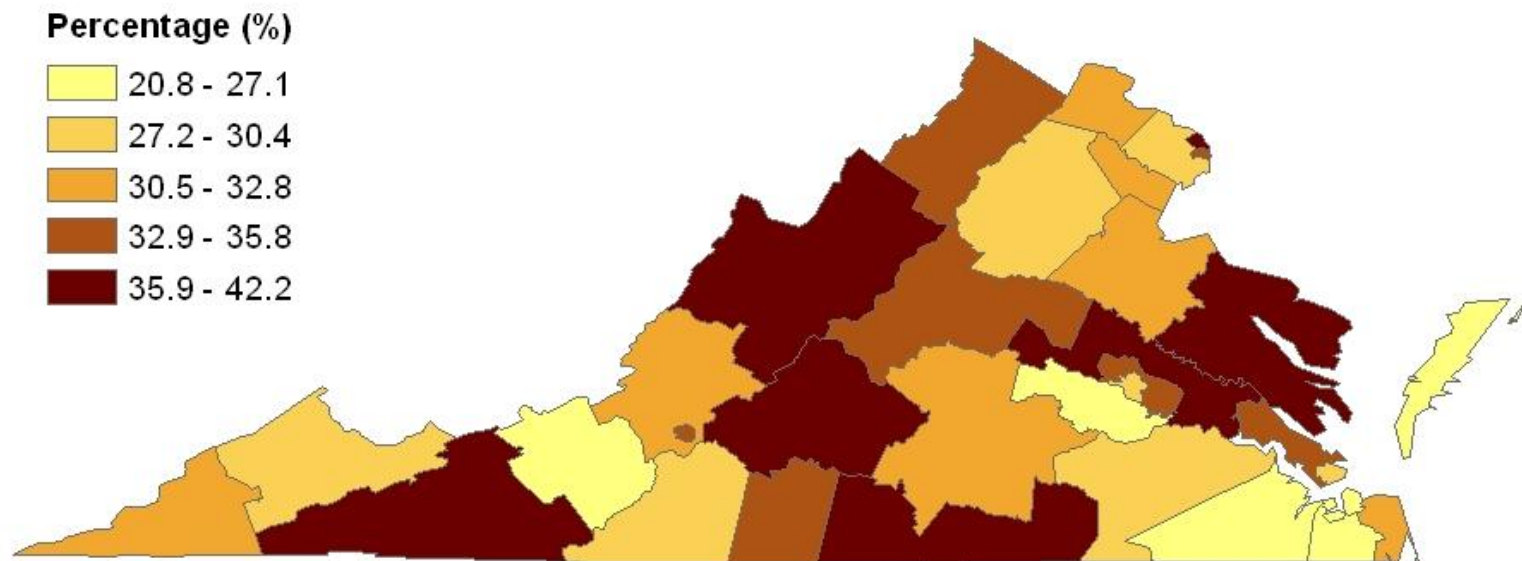
### Cancer Incidence Rate by Health District, Oral Cavity, Virginia, 2004-2008



Source: Virginia Cancer Registry, Virginia Department of Health.  
Rates are age-adjusted to the 2000 U.S. standard population.

#### IV. Cancer Data By Health District

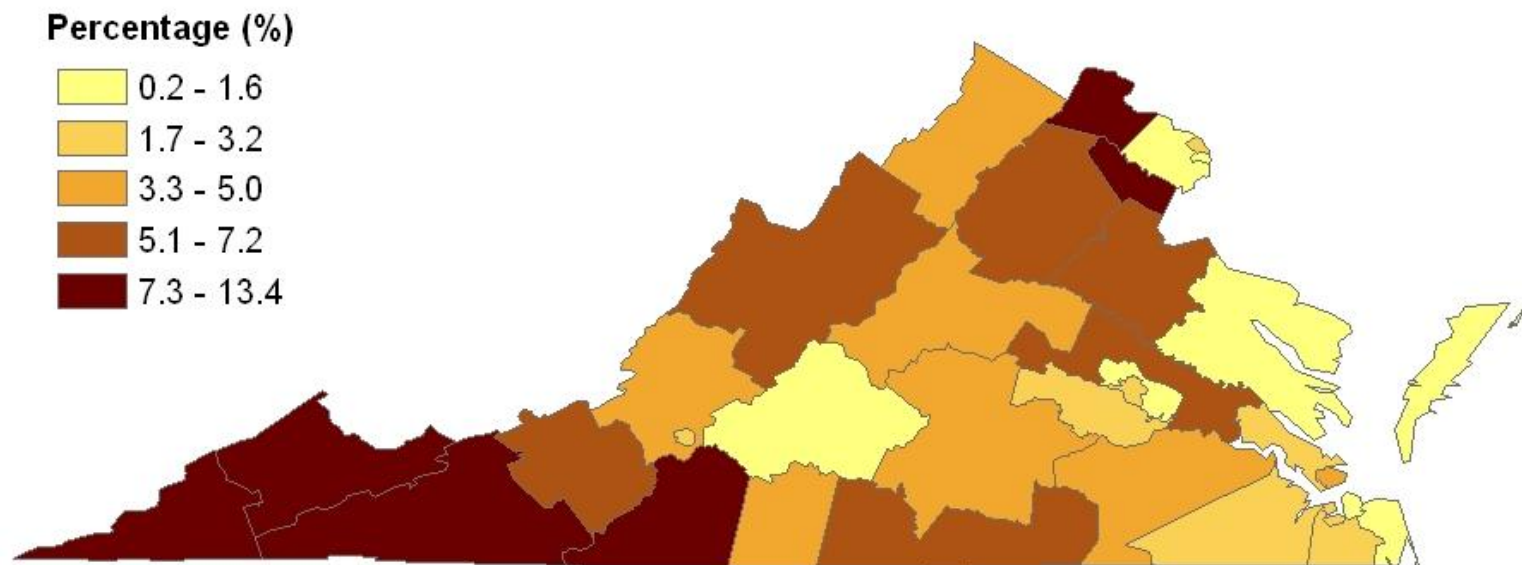
Percentage of Cancer Cases Diagnosed at Local Stage by Health District,  
Oral Cavity, Virginia, 2004-2008



Source: Virginia Cancer Registry, Virginia Department of Health.

#### IV. Cancer Data By Health District

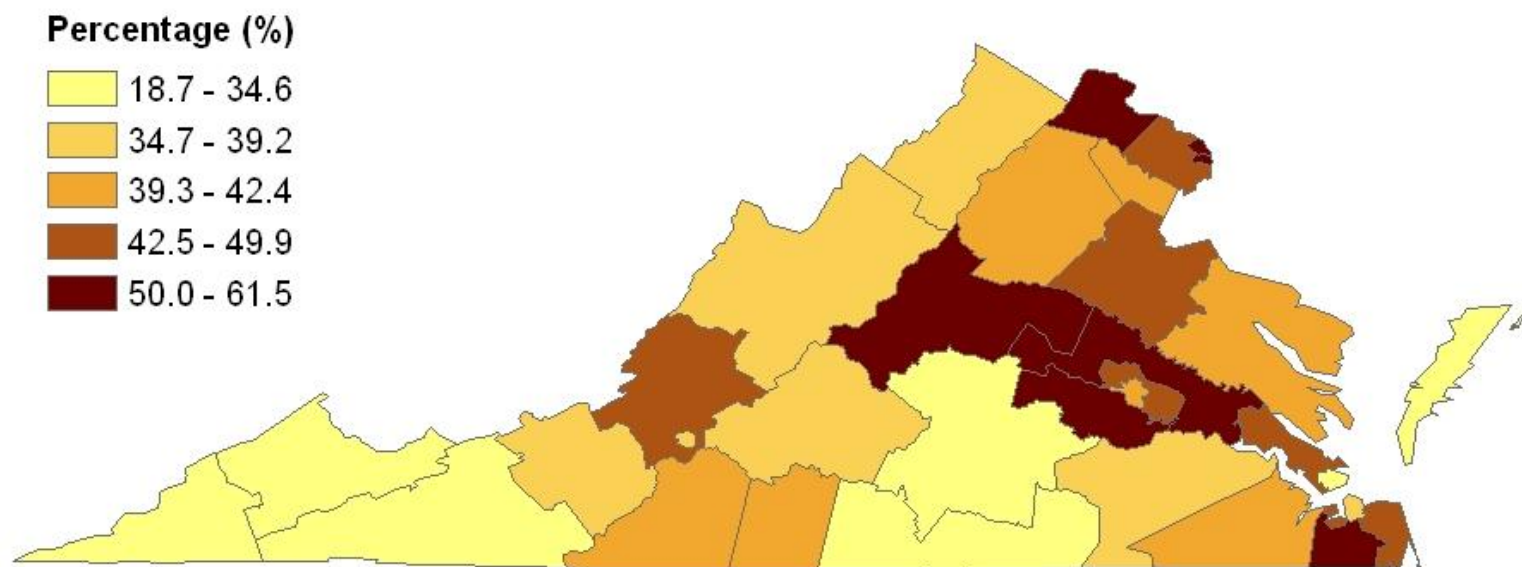
Current Smokeless Tobacco Use by Health District,  
Adults 18 and Older, Virginia, 2005-2009



Source: Virginia Behavioral Risk Factor Surveillance System. Percentages are weighted.

#### IV. Cancer Data By Health District

Oral Cancer Check in the Past Twelve Months by Health District,  
Adults 40 and Older, Virginia, 2006-2009



Source: Virginia Behavioral Risk Factor Surveillance System. Percentages are weighted.

#### IV. Cancer Data By Health District

**Sources:** Incidence and percent local staging (VA Cancer Registry); mortality (VDH Division of Health Statistics); screening prevalence (Behavioral Risk Factor Surveillance System).

<sup>1</sup>Based on combined 2004-2008 data. Rates are age- adjusted to the 2000 U.S. standard population. Districts are ranked in terms of incidence rates from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher incidence rates) are at greater risk.

<sup>2</sup>Based on combined 2004-2008 data. Percentage of Local Stage cancers are reported using the Summary Staging System. Districts are ranked in terms of percentage of cases diagnosed early (local) from lowest (=1) to highest (=35). Districts with lower rankings (i.e. lower early stage percentages) are at greater risk.

<sup>3</sup>Based on combined 2005-2009 data. Rates are age- adjusted to the 2000 U.S. standard population. Districts are ranked in terms of mortality rates from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher mortality rates) are at greater risk.

~Mortality rate is not reported if 25 or fewer deaths.

<sup>4</sup>Behavioral Risk Factor Surveillance System is a national telephone survey of adults 18+. District and state estimates are based on 2005 and 2009 (pooled) data for smokeless tobacco use and on 2006 and 2009 (pooled) data for oral cancer screening. Percentages are population-weighted.

Smokeless Tobacco Use = Percentage of adults 18+ years reporting currently using smokeless tobacco. Districts are ranked in terms of prevalence of smokeless tobacco use from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher smokeless tobacco use) are at greater risk.

Oral Cancer Screening = Percentage of adults age 40+ reporting an oral cancer check by a doctor or dentist within the past 12 months. Districts are ranked in terms of oral cancer screening prevalence from lowest (=1) to highest (=35). Districts with lower rankings (i.e. lower oral cancer screening prevalence) are at greater risk

Top five districts with the highest risk (i.e. lowest rank) are highlighted.

Maps illustrate rates or percentages in quantiles. Mortality map for oral cancer is not presented due to low mortality numbers.

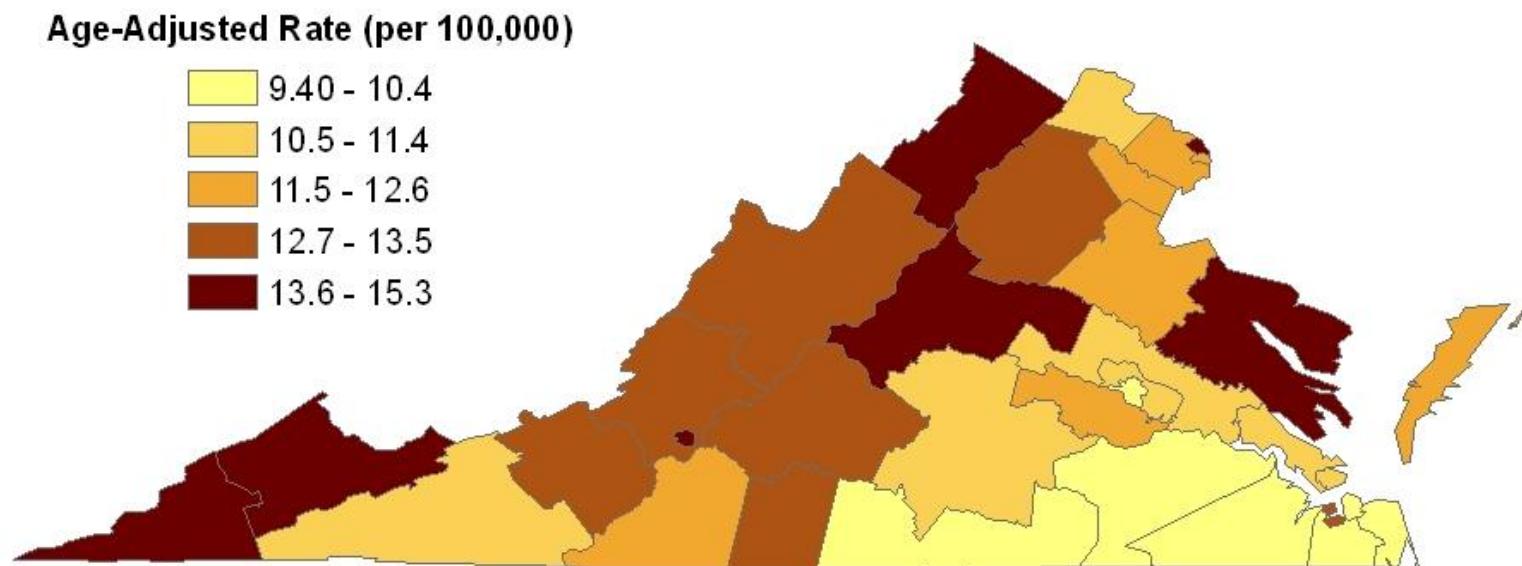
**IV. Cancer Data By Health District**  
**Ovarian Cancer Data By Health District**

Health District	Incidence <sup>1</sup>				Staging <sup>2</sup>	Mortality <sup>3</sup>			
	Count	Rate per 100,00	95% CI	Rank	Percent Local Stage	Count	Rate per 100,00	95% CI	Rank
Alexandria	45	12.6	9.1 - 16.9	15	~	24	~	~	NA
Alleghany	79	13.2	10.4 - 16.5	10	14%	62	9.7	7.3 - 12.1	7
Arlington	62	13.5	10.2 - 17.5	7	~	38	8.1	5.5 - 10.7	20
Central Shenandoah	112	12.9	10.6 - 15.6	13	12%	95	10.4	8.3 - 12.5	3
Central Virginia	103	13.1	10.6 - 16.0	11	16%	66	7.9	6.0 - 9.8	22
Chesapeake	52	9.6	7.1 - 12.6	34	~	39	7.2	4.9 - 9.5	29
Chesterfield	97	12.0	9.6 - 14.7	21	~	66	8.6	6.5 - 10.7	14
Chickahominy	46	11.4	8.3 - 15.3	23	~	43	10.4	7.3 - 13.5	3
Crater	43	9.6	6.9 - 13.0	33	~	42	9.1	6.3 - 11.9	11
Cumberland Plateau	52	14.0	10.4 - 18.6	5	21%	28	6.9	4.3 - 9.5	31
Eastern Shore	22	12.3	7.5 - 19.1	19	~	21	~	~	NA
Fairfax	332	12.5	11.2 - 14.0	16	18%	221	8.7	7.6 - 9.8	13
Hampton	41	10.7	7.7 - 14.6	26	~	42	11.0	7.7 - 14.3	1
Henrico	87	10.5	8.4 - 13.0	28	15%	78	8.6	6.7 - 10.5	14
Lenowisco	44	15.3	11.0 - 20.8	1	~	26	8.4	5.2 - 11.6	16
Lord Fairfax	92	14.3	11.5 - 17.6	3	12%	64	9.4	7.1 - 11.7	9
Loudoun	49	10.8	7.8 - 14.5	25	27%	30	7.0	4.5 - 9.5	30
Mount Rogers	78	11.4	8.9 - 14.4	22	17%	51	6.9	5.0 - 8.8	31
New River	55	12.7	9.5 - 16.6	14	~	44	9.4	6.6 - 12.2	9
Norfolk	57	10.0	7.5 - 13.0	32	~	43	7.5	5.3 - 9.7	27
Peninsula	102	10.9	8.9 - 13.3	24	13%	74	7.6	5.9 - 9.3	25
Piedmont	34	10.7	7.3 - 15.2	27	~	28	7.6	4.8 - 10.4	25
Pittsylvania/Danville	51	13.5	9.9 - 18.0	8	22%	35	8.2	5.5 - 10.9	18
Portsmouth	39	13.4	9.5 - 18.4	9	~	21	~	~	NA
Prince William	95	12.3	9.8 - 15.2	18	20%	57	7.8	5.8 - 9.8	23
Rappahannock	87	12.2	9.7 - 15.1	20	~	66	10.0	7.6 - 12.4	6
Rappahannock/Rapidan	62	13.1	10.0 - 16.8	12	~	53	10.8	7.9 - 13.7	2
Richmond City	62	10.3	7.9 - 13.3	30	~	49	7.4	5.3 - 9.5	28
Roanoke	47	14.8	10.7 - 20.0	2	~	32	8.4	5.5 - 11.3	16
Southside	30	9.4	6.3 - 13.8	35	~	34	10.3	6.8 - 13.8	5
Thomas Jefferson	93	14.1	11.4 - 17.4	4	17%	66	9.5	7.2 - 11.8	8
Three Rivers	69	13.6	10.5 - 17.5	6	~	49	9.0	6.5 - 11.5	12
Virginia Beach	108	10.0	8.2 - 12.1	31	11%	86	8.1	6.4 - 9.8	20
West Piedmont	61	12.5	9.5 - 16.2	17	~	43	8.2	5.7 - 10.7	18
Western Tidewater	44	10.4	7.6 - 14.1	29	~	32	7.7	5.0 - 10.4	24
VIRGINIA	2,532	12.0	11.5 - 12.4		14%	1,848	8.5	8.1 - 8.9	



#### IV. Cancer Data By Health District

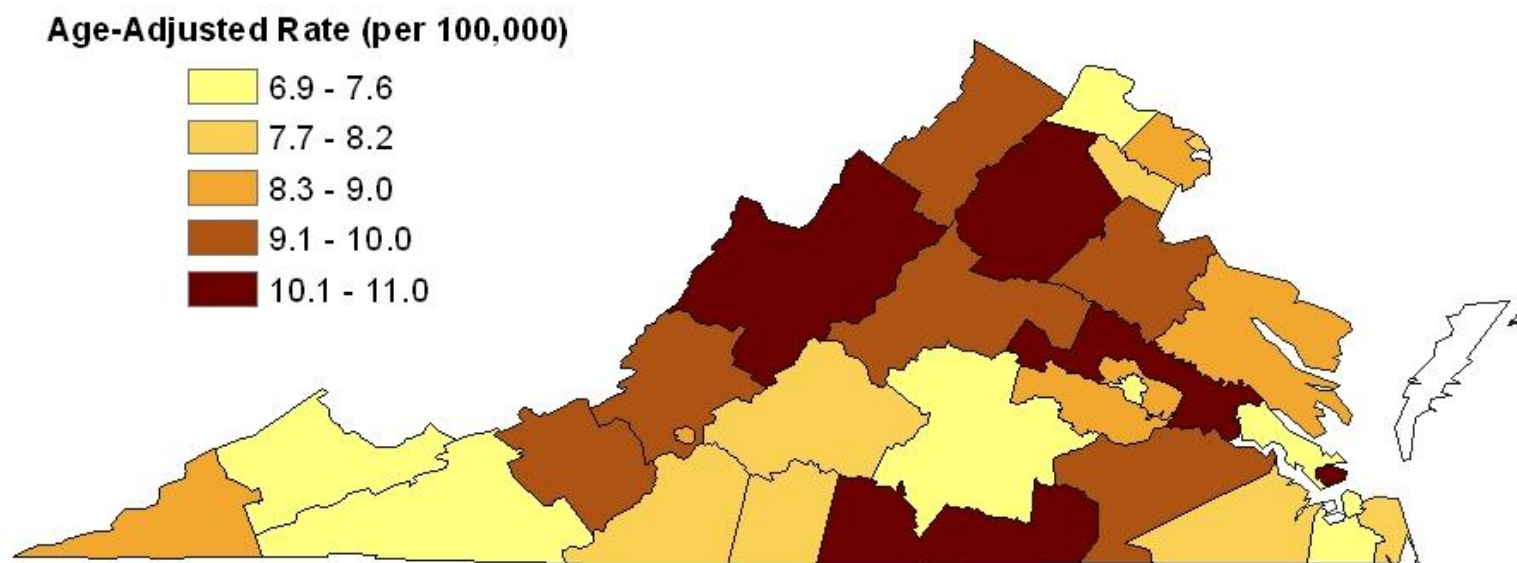
### Cancer Incidence Rate by Health District, Ovarian, Virginia, 2004-2008



Source: Virginia Cancer Registry, Virginia Department of Health.  
Rates are age-adjusted to the 2000 U.S. standard population.

#### IV. Cancer Data By Health District

### Cancer Mortality Rate by Health District, Ovarian, Virginia, 2005-2009



Source: Division of Health Statistics, Virginia Department of Health.  
Rates are age-adjusted to the 2000 U.S. standard population.

#### IV. Cancer Data By Health District

**Sources:** Incidence and percent local staging (VA Cancer Registry); mortality (VDH Division of Health Statistics); screening prevalence (Behavioral Risk Factor Surveillance System).

<sup>1</sup>Based on combined 2004-2008 data. Rates are age- adjusted to the 2000 U.S. standard population. Districts are ranked in terms of incidence rates from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher incidence rates) are at greater risk.

<sup>2</sup> Based on combined 2004-2008 data. Percentage of Local Stage cancers are reported using the Summary Staging System. Districts are ranked in terms of percentage of cases diagnosed early (local) from lowest (=1) to highest (=35). Districts with lower rankings (i.e. lower early stage percentages) are at greater risk.

<sup>3</sup>Based on combined 2005-2009 data. Rates are age- adjusted to the 2000 U.S. standard population. Districts are ranked in terms of mortality rates from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher mortality rates) are at greater risk.

~Incidence count is not reported if >0 and <11. Incidence rate is not reported if fewer than 16 cases. Percent local stage not reported if reflects a count >0 and <11. Mortality rate is not reported if 25 or fewer deaths. Death count is not reported if >0 and <5.

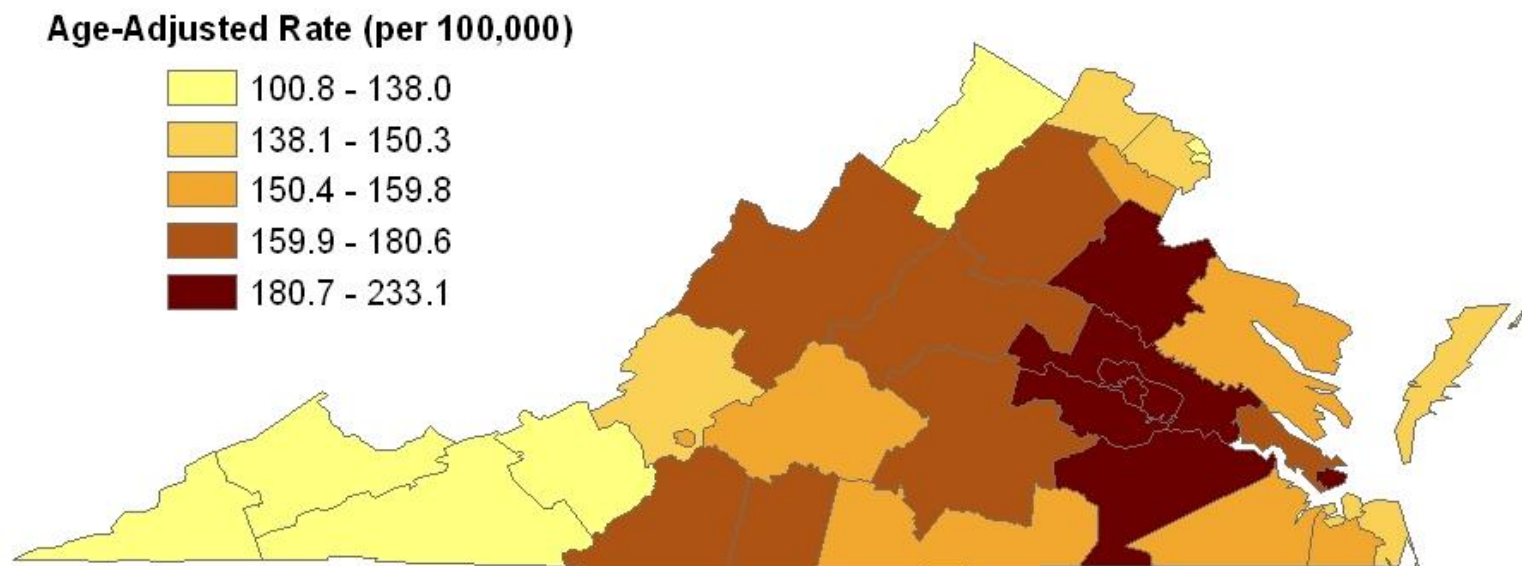
Maps illustrate rates in quantiles. Health districts with low mortality numbers are shown in white and not included in quantiles.

**IV. Cancer Data By Health District**  
**Prostate Cancer Data By Health District**

Health District	Incidence <sup>1</sup>			Rank	Staging <sup>2</sup>		Mortality <sup>3</sup>				Prostate Cancer Screening Prevalence: PSA Test <sup>4</sup>		
	Count	Rate per 100,00	95% CI		Percent Local Stage	Rank	Count	Rate per 100,00	95% CI	Rank	Prevalence	95% CI	Rank
Alexandria	339	123.6	110.4 - 137.9	32	70%	2	45	18.7	13.2 - 24.2	35	58.5%	41.9% - 73.3%	23
Alleghany	763	149.5	138.8 - 160.7	23	85%	34	92	22.3	17.7 - 26.9	29	54.7%	43.4% - 65.6%	16
Arlington	517	136.3	124.3 - 149.1	30	71%	6	65	22.1	16.7 - 27.5	30	52.4%	37.9% - 66.5%	13
Central Shenandoah	1,194	169.0	159.4 - 179.0	9	73%	8	152	25.4	21.4 - 29.4	18	60.6%	48.1% - 71.8%	31
Central Virginia	1,058	158.3	148.8 - 168.3	16	82%	30	131	23.5	19.5 - 27.5	28	60.1%	48.0% - 71.1%	28
Chesapeake	657	151.7	139.7 - 164.4	20	76%	15	99	32.3	25.9 - 38.7	5	65.2%	48.3% - 79.0%	35
Chesterfield	1,561	233.1	220.4 - 246.2	1	78%	20	136	34.3	28.5 - 40.1	4	51.6%	37.9% - 65.0%	7
Chickahominy	699	189.6	175.2 - 204.9	6	73%	9	65	24.0	18.2 - 29.8	22	59.9%	48.8% - 70.1%	27
Crater	793	220.9	205.4 - 237.3	3	75%	13	116	41.8	34.2 - 49.4	1	51.8%	40.8% - 62.6%	8
Cumberland Plateau	366	114.4	102.5 - 127.4	34	85%	33	55	24.0	17.7 - 30.3	22	48.1%	37.2% - 59.1%	4
Eastern Shore	231	144.6	126.2 - 165.0	24	71%	3	33	23.8	15.7 - 31.9	24	52.0%	40.7% - 63.0%	10
Fairfax	3,312	144.5	139.4 - 149.9	25	75%	12	301	18.8	16.7 - 20.9	34	61.6%	46.1% - 75.1%	34
Hampton	652	215.8	199.2 - 233.3	4	83%	31	65	28.1	21.3 - 34.9	14	52.1%	39.6% - 64.3%	12
Henrico	1,246	203.0	191.7 - 214.7	5	77%	19	109	20.9	17.0 - 24.8	33	60.2%	46.2% - 72.7%	29
Lenowisco	263	100.8	88.8 - 114.1	35	78%	21	48	23.6	16.9 - 30.3	25	42.7%	31.6% - 54.5%	2
Lord Fairfax	710	124.6	115.3 - 134.3	31	74%	11	92	21.1	16.8 - 25.4	32	59.8%	48.2% - 70.4%	26
Loudoun	541	140.8	128.0 - 154.5	26	77%	18	57	23.6	17.5 - 29.7	25	55.5%	38.7% - 71.2%	17
Mount Rogers	680	118.7	109.7 - 128.2	33	80%	27	116	24.2	19.8 - 28.6	21	52.0%	39.5% - 64.3%	10
New River	536	138.0	126.3 - 150.4	29	81%	28	75	24.3	18.8 - 29.8	20	48.8%	36.8% - 60.8%	6
Norfolk	570	140.4	128.9 - 152.6	27	71%	4	113	32.1	26.2 - 38.0	6	60.6%	48.4% - 71.6%	31
Peninsula	1,228	161.0	151.9 - 170.4	14	79%	25	147	23.6	19.8 - 27.4	25	45.9%	33.5% - 58.9%	3
Piedmont	501	180.6	164.9 - 197.4	8	71%	5	67	28.7	21.8 - 35.6	11	58.9%	45.8% - 70.8%	25
Pittsylvania/Danville	509	162.7	148.7 - 177.8	12	84%	32	81	29.6	23.2 - 36.0	10	58.7%	45.2% - 71.1%	24
Portsmouth	324	150.3	134.3 - 167.7	22	76%	16	76	40.1	31.1 - 49.1	2	60.9%	49.4% - 71.3%	32
Prince William	953	157.7	146.3 - 169.7	17	78%	22	108	28.5	23.1 - 33.9	12	55.8%	42.0% - 68.8%	18
Rappahannock	1,020	185.5	173.5 - 198.1	7	80%	26	95	26.4	21.1 - 31.7	16	57.0%	44.3% - 68.9%	21
Rappahannock/Rapidan	709	164.6	152.3 - 177.6	10	76%	17	67	22.0	16.7 - 27.3	31	53.0%	41.8% - 63.9%	14
Richmond City	935	224.5	210.3 - 239.4	2	63%	1	127	31.5	26.0 - 37.0	8	42.6%	30.0% - 56.3%	1
Roanoke	377	159.8	144.0 - 177.0	15	79%	23	66	28.2	21.4 - 35.0	13	56.5%	43.5% - 68.7%	20
Southside	422	153.4	138.9 - 169.1	19	81%	29	71	32.1	24.6 - 39.6	6	56.5%	44.2% - 68.1%	20
Thomas Jefferson	896	163.7	153.0 - 175.0	11	79%	24	120	25.3	20.8 - 29.8	19	52.1%	41.2% - 62.7%	12
Three Rivers	763	156.8	145.7 - 168.6	18	73%	7	124	30.1	24.8 - 35.4	9	53.8%	42.3% - 64.8%	15
Virginia Beach	1,184	138.5	130.5 - 146.9	28	75%	14	168	26.1	22.2 - 30.0	17	58.4%	45.2% - 70.5%	22
West Piedmont	696	162.5	150.4 - 175.4	13	87%	35	97	27.3	21.9 - 32.7	15	48.6%	35.3% - 62.1%	5
Western Tidewater	521	151.5	138.3 - 165.5	21	74%	10	99	38.5	30.9 - 46.1	3	61.4%	49.0% - 72.5%	33
VIRGINIA	27,726	159.4	157.5 - 161.4		77%		3,478	25.7	24.8 - 26.6		56.0%	55.3% - 62.5%	

#### IV. Cancer Data By Health District

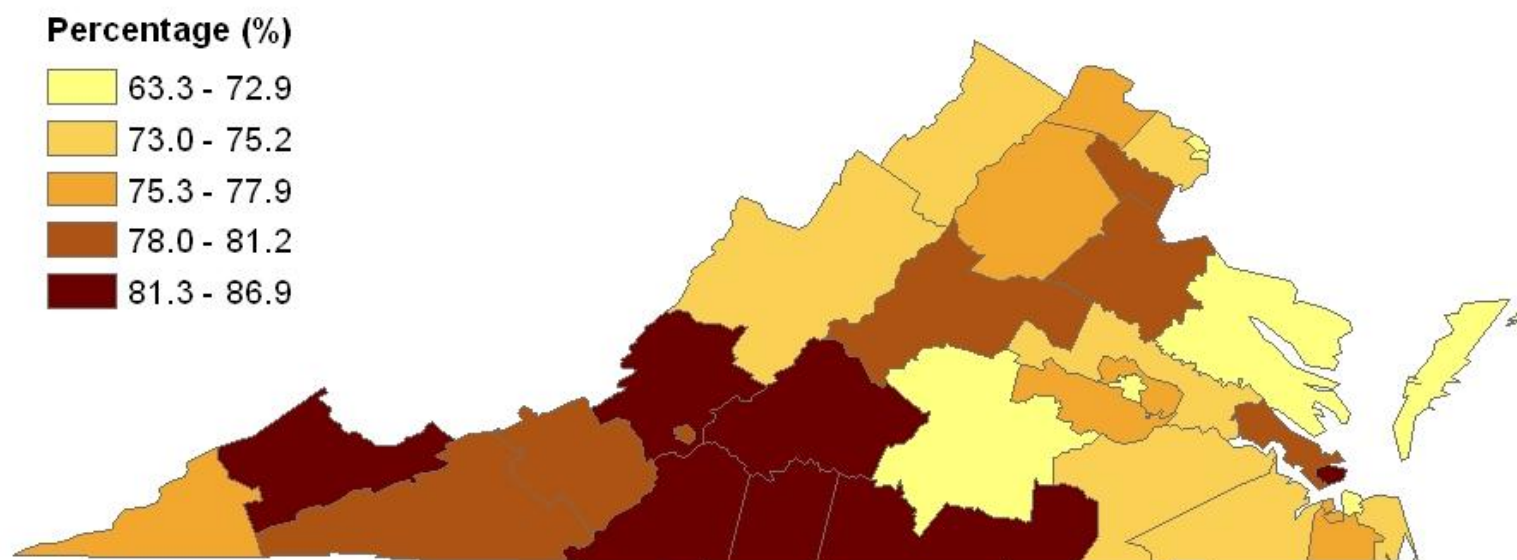
### Cancer Incidence Rate by Health District, Prostate, Virginia, 2004-2008



Source: Virginia Cancer Registry, Virginia Department of Health.  
Rates are age-adjusted to the 2000 U.S. standard population.

#### IV. Cancer Data By Health District

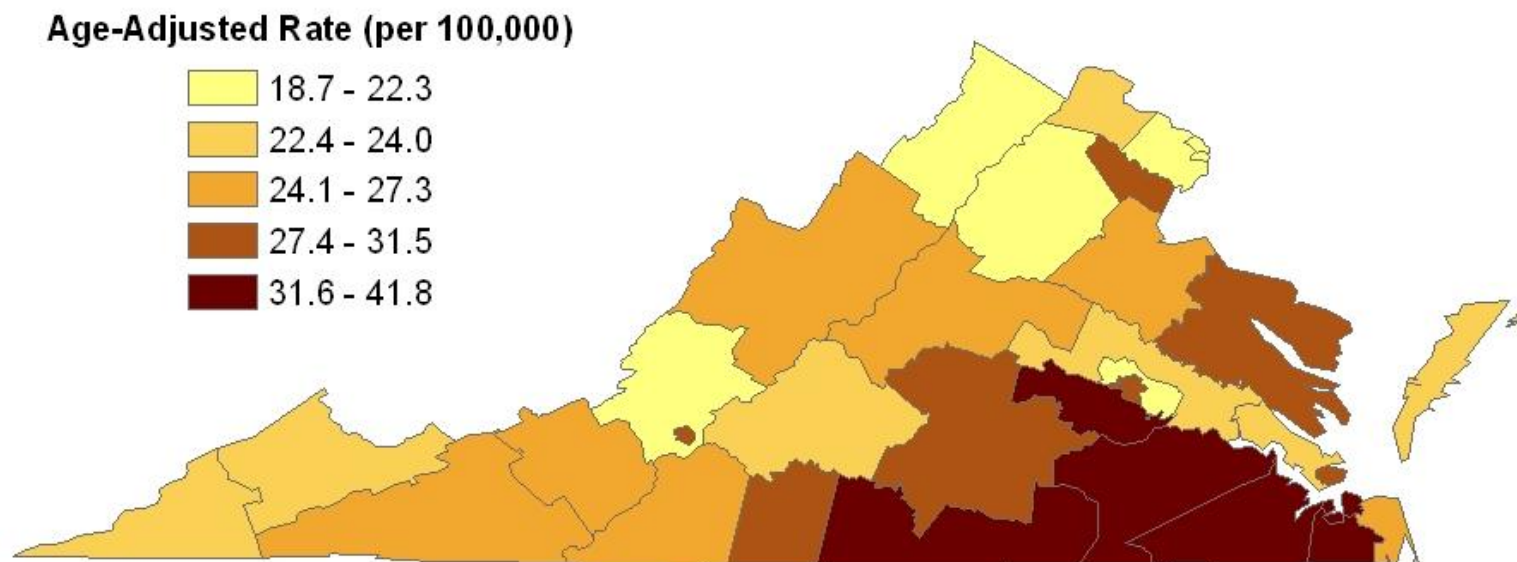
Percentage of Cancer Cases Diagnosed at Local Stage by Health District,  
Prostate, Virginia, 2004-2008



Source: Virginia Cancer Registry, Virginia Department of Health.

#### IV. Cancer Data By Health District

### Cancer Mortality Rate by Health District, Prostate, Virginia, 2005-2009

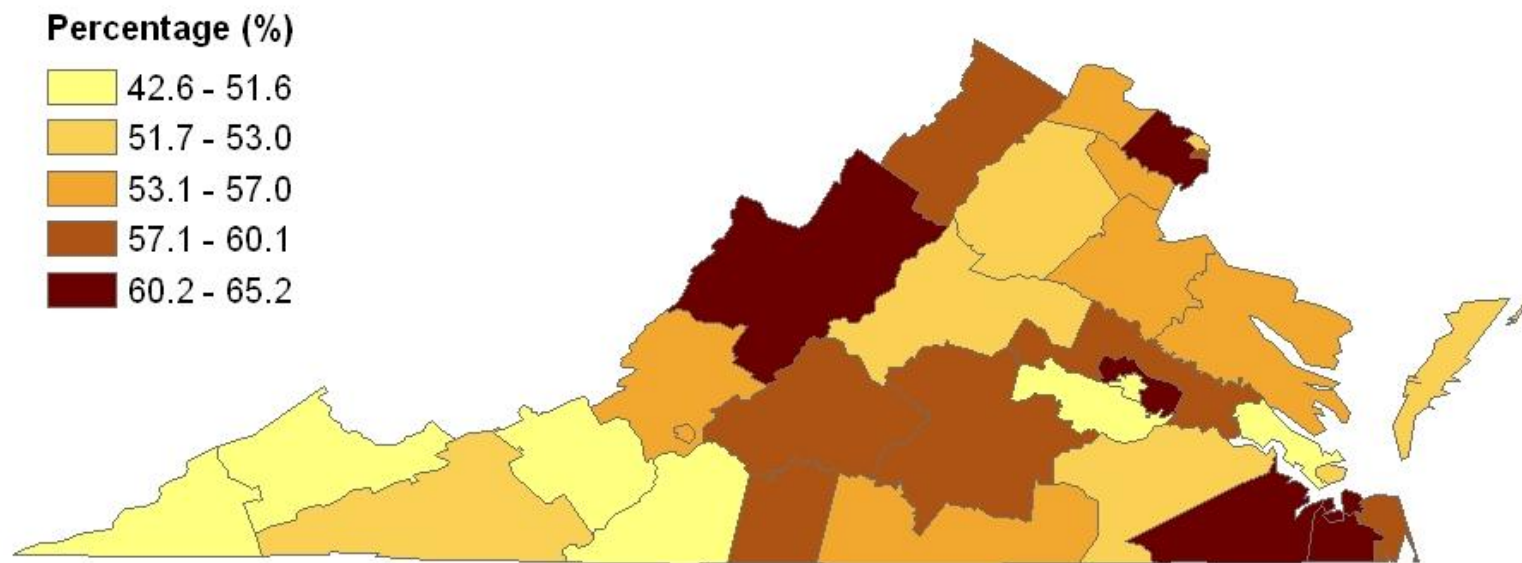


Source: Division of Health Statistics, Virginia Department of Health.  
Rates are age-adjusted to the 2000 U.S. standard population.



#### IV. Cancer Data By Health District

### Prostate-Specific Antigen (PSA) Test Within the Past Two Years by Health District, Men 40 and Older, Virginia, 2006-2008



Source: Virginia Behavioral Risk Factor Surveillance System. Percentages are weighted.



#### IV. Cancer Data By Health District

Sources: Incidence and percent local staging (VA Cancer Registry); mortality (VDH Division of Health Statistics); screening prevalence (Behavioral Risk Factor Surveillance System)

<sup>1</sup> Based on combined 2004-2008 data. Age-adjusted rates are reported and adjusted to the 2000 U.S. standard population. Districts are ranked in terms of incidence rates from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher incidence rates) are at greater risk.

<sup>2</sup> Based on combined 2004-2008 data. Percent of Local Stage cancers reported using the Summary Staging System. Districts are ranked in terms of percentage of cases diagnosed early (local) from lowest (=1) to highest (=35). Districts with lower rankings (i.e. lower early stage percentages) are at greater risk.

<sup>3</sup> Based on combined 2005-2009 data. Mortality rates are age-adjusted using the 2000 Standard Population. Districts are ranked in terms of mortality rates from highest (=1) to lowest (=35). Districts with lower rankings (i.e. higher mortality rates) are at greater risk.

<sup>4</sup> Behavioral Risk Factor Surveillance System is a national telephone survey of adults 18+. Prostate Cancer Screening = Percentage of men age 40 years and older reporting having a PSA test in past two years. Based on data from 2006 and 2008 (pooled). Percentages are population-weighted. Districts are ranked in terms of prevalence of prostate cancer screening from lowest (=1) to highest (=35). District with lower rankings (i.e. lower PSA test prevalence) are at greater risk.

Top five districts with the highest risk (i.e. lowest ranks) are highlighted.

Maps illustrate rates or percentages in quantiles.

## V. Cancer Data By Race

### V. Cancer Data By Race

#### All Sites Cancer Data By Race

Race	Incidence <sup>1</sup>			Staging <sup>2</sup>	Mortality <sup>3</sup>		
	Count	Rate per 100,00	95% CI	Percent Local Stage	Count	Rate per 100,00	95% CI
All African-Americans	30,658	480.7	475.2 - 486.2	42%	13,702	222.8	219.0 - 226.5
African-American Men	16,431	626.9	616.8 - 637.1	46%	7,186	301.5	294.5 - 308.4
African-American Women	14,226	384.7	378.3 - 391.1	38%	6,516	177.4	173.1 - 181.7
All Whites	137,875	452.5	450.1 - 454.9	46%	54,281	177.3	175.8 - 178.7
White Men	71,770	527.9	523.9 - 531.9	46%	28,160	217.5	214.9 - 220.0
White Women	66,101	400.2	397.2 - 403.3	45%	26,121	150.7	148.9 - 152.6

Sources: Incidence and percent local staging (VA Cancer Registry); mortality (VDH Division of Health Statistics)

<sup>1</sup> Based on combined 2004-2008 data. Incidence rates are age-adjusted to the 2000 U.S. standard population.

<sup>2</sup> Based on combined 2004-2008 data. Percent of Local Stage cancers reported using the Summary Staging System.

<sup>3</sup> Based on combined 2005-2009 data. Mortality rates are age-adjusted to the 2000 U.S. standard population.

V. Cancer Data By Race  
**Select Cancer Risk Factor Data By Race**

Race	Overweight <sup>1</sup>		Current Smoking <sup>2</sup>	
	Prevalence	95% CI	Prevalence	95% CI
All African-Americans	71.8%	67.4% - 75.9%	19.9%	16.6% - 23.7%
African-American Men	71.0%	63.0% - 77.8%	23.2%	17.2% - 30.6%
African-American Women	72.5%	67.4% - 77.1%	17.4%	14.2% - 21.0%
All Whites	60.7%	59.3% - 62.2%	17.8%	16.7% - 18.9%
White Men	70.3%	68.0% - 77.8%	19.0%	17.3% - 20.9%
White Women	51.3%	48.5% - 53.2%	16.6%	15.4% - 17.9%

Source: Behavioral Risk Factor Surveillance System

<sup>1</sup> Overweight = Percentage of adults who report having a BMI greater than or equal to 25. Based on 2007-2009 data (pooled). Percentages are population-weighted.

<sup>2</sup> Smoking=Percentage of adults who report currently smoking and have smoked at least 100 cigarettes in their lifetime Based on 2007-2009 data (pooled). Percentages are population-weighted.

V. Cancer Data By Race  
**Breast Cancer (Female) Data By Race**

Race	Incidence <sup>1</sup>			Staging <sup>2</sup>	Mortality <sup>3</sup>			Screening <sup>4</sup>	
	Count	Rate per 100,00	95% CI	Percent Local Stage	Count	Rate per 100,00	95% CI	Prevalence Mammography	95% CI
African-American Women	4,792	126.4	122.8 - 130.0	52%	1,293	33.8	32.0 - 35.7	77.5%	75.6% - 79.2%
White Women	20,481	124.2	122.5 - 126.0	62%	3,986	23.1	22.4 - 23.9	77.6%	75.7% - 79.4%

Sources: Incidence and percent local staging (VA Cancer Registry); mortality (VDH Division of Health Statistics); screening prevalence (Behavioral Risk Factor Surveillance System)

<sup>1</sup> Based on combined 2004-2008 data. Incidence rate are age-adjusted to the 2000 U.S. standard population.

<sup>2</sup> Based on combined 2004-2008 data. Percent of Local Stage cancers reported using the Summary Staging System.

<sup>3</sup> Based on combined 2005-2009 data. Mortality rates are age-adjusted to the 2000 U.S. standard population.

<sup>4</sup> Behavioral Risk Factor Surveillance System is a national telephone survey of adults 18+. Breast Cancer Screening = Percent of women age 40 years and older reporting having a mammogram in past two years. Based on 2006 and 2008 data (pooled). Percentages are population-weighted.

V. Cancer Data By Race  
**Cervical Cancer Data By Race**

Race	Incidence <sup>1</sup>			Staging <sup>2</sup>	Mortality <sup>3</sup>			Screening <sup>4</sup>	
	Count	Rate per 100,00	95% CI	Percent Local Stage	Count	Rate per 100,00	95% CI	Prevalence Pap Test	95% CI
African-American Women	275	7.1	6.3 - 8.1	38%	126	3.3	2.8 - 3.9	86.8%	79.1% - 91.9%
White Women	966	6.4	6.0 - 6.8	48%	314	1.9	1.7 - 2.1	84.0%	81.4% - 86.2%

Sources: Incidence and percent local staging (VA Cancer Registry); mortality (VDH Division of Health Statistics); screening prevalence (Behavioral Risk Factor Surveillance System)

<sup>1</sup> Based on combined 2004-2008 data. Incidence rates are age-adjusted to the 2000 U.S. standard population.

<sup>2</sup> Based on combined 2004-2008 data. Percent of Local Stage cancers reported using the Summary Staging System.

<sup>3</sup> Based on combined 2005-2009 data. Mortality rates are age-adjusted to the 2000 U.S. standard population.

<sup>4</sup> Behavioral Risk Factor Surveillance System is a national telephone survey of adults 18+. Cervical Cancer Screening = Percentage of women age 18 years and older reporting having a Pap test in past three years. Women who had a hysterectomy are excluded. Based on 2006 and 2008 data (pooled). Percentages are population-weighted.

V. Cancer Data By Race  
**Colorectal Cancer Data By Race**

Race	Incidence <sup>1</sup>			Staging <sup>2</sup>	Mortality <sup>3</sup>			Screening <sup>4</sup>	
	Count	Rate per 100,00	95% CI	Percent Local Stage	Count	Rate per 100,00	95% CI	Prevalence Colorectal Screening	95% CI
All African-Americans	3,403	55.0	53.2 - 56.9	37%	1,443	23.7	22.5 - 25.0	66.4%	61.1% - 71.3%
African-American Men	1,669	65.5	62.2 - 68.9	37%	722	29.8	27.6 - 32.0	63.2%	54.6% - 71.0%
African-American Women	1,734	48.0	45.8 - 50.3	38%	721	19.9	18.5 - 21.4	68.2%	61.6% - 74.2%
All Whites	13,080	43.3	42.5 - 44.0	41%	4,767	15.6	15.2 - 16.1	63.4%	61.5% - 65.3%
White Men	6,699	50.0	48.8 - 51.3	41%	2,403	18.6	17.8 - 19.3	64.5%	61.5% - 67.4%
White Women	6,379	37.7	36.8 - 38.7	41%	2,364	13.4	12.9 - 13.9	62.5%	59.9% - 65.0%

Sources: Incidence and percent local staging (VA Cancer Registry); mortality (VDH Division of Health Statistics); screening prevalence (Behavioral Risk Factor Surveillance System)

<sup>1</sup> Based on combined 2004-2008 data. Incidence rates are age-adjusted to the 2000 U.S. standard population.

<sup>2</sup> Based on combined 2004-2008 data. Percent of Local Stage cancers reported using the Summary Staging System.

<sup>3</sup> Based on combined 2005-2009 data. Mortality rates are age-adjusted to the 2000 U.S. standard population.

<sup>4</sup> Behavioral Risk Factor Surveillance System is a national telephone survey of adults 18+. Colorectal cancer screening = Percentage of adults 50 and older who reported having a sigmoidoscopy/colonoscopy within the past 5 years and/or a home blood stool test within the past year. Based on 2006 and 2008 data (pooled). Percentages are population-weighted.

V. Cancer Data By Race  
**Lung and Bronchus Cancer Data By Race**

Race	Incidence <sup>1</sup>			Staging <sup>2</sup>	Mortality <sup>3</sup>			Risk Factor <sup>4</sup>	
	Count	Rate per 100,00	95% CI	Percent Local Stage	Count	Rate per 100,00	95% CI	Prevalence Current Smoking	95% CI
All African-Americans	4,378	71.7	69.6 - 73.9	14%	3,557	57.7	55.8 - 59.6	19.9%	16.6% - 23.7%
African-American Men	2,593	105.3	101.1 - 109.7	13%	2,159	88.7	84.9 - 92.4	23.2%	17.2% - 30.6%
African-American Women	1,785	49.9	47.6 - 52.3	16%	1,398	38.3	36.3 - 40.3	17.4%	14.2% - 21.0%
All Whites	20,816	68.9	68.0 - 69.9	19%	16,270	53.0	52.2 - 53.8	17.8%	16.7% - 18.9%
White Men	11,431	86.5	84.9 - 88.1	17%	9,053	68.2	66.8 - 69.6	19.0%	17.3% - 20.9%
White Women	9,385	56.1	55.0 - 57.3	21%	7,217	41.9	40.9 - 42.8	16.6%	15.4% - 17.9%

Sources: Incidence and percent local staging (VA Cancer Registry); mortality (VDH Division of Health Statistics); risk factor prevalence (Behavioral Risk Factor Surveillance System)

<sup>1</sup> Based on combined 2004-2008 data. Incidence rates are age-adjusted to the 2000 U.S. standard population.

<sup>2</sup> Based on combined 2004-2008 data. Percent of Local Stage cancers reported using the Summary Staging System.

<sup>3</sup> Based on combined 2005-2009 data. Mortality rates are age-adjusted to the 2000 U.S. standard population.

<sup>4</sup> Behavioral Risk Factor Surveillance System is a national telephone survey of adults 18+. Smoking=Percentage of adults who report currently smoking and have smoked at least 100 cigarettes in their lifetime. Based on 2007-2009 data (pooled). Percentages are population-weighted.

V. Cancer Data By Race  
**Melanoma Data By Race**

Race	Incidence <sup>1</sup>			Staging <sup>2</sup>	Mortality <sup>3</sup>			Risk Factor <sup>4</sup>	
	Count	Rate per 100,00	95% CI	Percent Local Stage	Count	Rate per 100,00	95% CI	Prevalence Sunburn	95% CI
All African-Americans	73	1.2	0.9 - 1.5	45%	32	0.5	0.3 - 0.7	4.5%	2.6% - 7.6%
African-American Men	26	1.0	0.6 - 1.5	42%	15	~	~	6.2%	2.7% - 13.7%
African-American Women	47	1.3	0.9 - 1.7	47%	17	~	~	3.2%	1.8% - 5.7%
All Whites	7,356	24.4	23.8 - 25.0	74%	1,109	3.6	3.4 - 3.8	37.3%	35.0% - 39.7%
White Men	4,289	31.3	30.4 - 32.3	72%	704	5.2	4.8 - 5.6	44.4%	40.3% - 48.5%
White Women	3,067	19.5	18.8 - 20.2	77%	405	2.4	2.2 - 2.6	30.8%	28.4% - 33.4%

Sources: Incidence and percent local staging (VA Cancer Registry); mortality (VDH Division of Health Statistics); risk factor prevalence (Behavioral Risk Factor Surveillance System)

<sup>1</sup> Based on combined 2004-2008 data. Incidence rates are age-adjusted to the 2000 U.S. standard population.

<sup>2</sup> Based on combined 2004-2008 data. Percent of Local Stage cancers reported using the Summary Staging System.

<sup>3</sup> Based on combined 2005-2009 data. Mortality rates are age-adjusted to the 2000 U.S. standard population.

~ Mortality rate is not reported if 25 or fewer cases.

<sup>4</sup> Behavioral Risk Factor Surveillance System is a national telephone survey of adults 18+. Sunburn = Percentage of adults age 18 years and older reporting having a sunburn in the last 12 months. Based on 2007 data. Percentages are population-weighted.



**V. Cancer Data By Race**  
**Oral Cavity Cancer Data By Race**

Race	Incidence <sup>1</sup>			Staging <sup>2</sup>	Mortality <sup>3</sup>			Risk Factor and Screening <sup>4</sup>			
	Count	Rate per 100,00	95% CI	Percent Local Stage	Count	Rate per 100,00	95% CI	Prevalence Smokeless Tobacco	95% CI	Prevalence Oral Cancer Check	95% CI
All African-Americans	668	9.8	9.1 - 10.6	22%	205	3.1	2.7 - 3.6	2.7%	0.7% - 10.0%	27.8%	23.5% - 32.6%
African-American Men	499	16.9	15.4 - 18.5	19%	152	5.6	4.7 - 6.4	5.4%	1.2% - 22.0%	34.4%	26.7% - 43.1%
African-American Women	169	4.5	3.8 - 5.2	29%	53	1.4	1.0 - 1.8	0.7%	0.3% - 1.3%	24.3%	19.5% - 29.7%
All Whites	3,293	10.6	10.2 - 11.0	34%	647	2.1	1.9 - 2.3	4.1%	3.6% - 4.8%	46.7%	44.8% - 48.5%
White Men	2,296	15.9	15.2 - 16.6	30%	443	3.3	3.0 - 3.6	7.9%	6.7% - 9.2%	44.6%	41.7% - 47.6%
White Women	997	6.0	5.7 - 6.4	44%	204	1.2	1.0 - 1.3	0.6%	0.4% - 0.9%	48.5%	46.1% - 50.8%

Sources: Incidence and percent local staging (VA Cancer Registry); mortality (VDH Division of Health Statistics); risk factor and screening prevalence (Behavioral Risk Factor Surveillance System)

<sup>1</sup> Based on combined 2004-2008 data. Incidence rates are age-adjusted to the 2000 U.S. standard population.

<sup>2</sup> Based on combined 2004-2008 data. Percent of Local Stage cancers reported using the Summary Staging System

<sup>3</sup> Based on combined 2005-2009 data. Mortality rates are age-adjusted to the 2000 U.S. standard population.

<sup>4</sup> Behavioral Risk Factor Surveillance System is a national telephone survey of adults 18+.

Smokeless Tobacco Use = Percentage of adults age 18+ years reporting current use of smokeless tobacco. Based on 2005 and 2009 (pooled) data. Percentages are population-weighted.

Oral Cancer Screening = Percentage of adults age 40+ years reporting an oral cancer check by a doctor/dentist within the past 12 months. Based on 2006 and 2009 (pooled) data. Percentages are population-weighted.

## V. Cancer Data By Race

### Ovarian Cancer Data By Race

Race	Incidence <sup>1</sup>			Staging <sup>2</sup>	Mortality <sup>3</sup>		
	Count	Rate per 100,00	95% CI	Percent Local Stage	Count	Rate per 100,00	95% CI
African-American Women	328	8.8	7.9 - 9.8	13%	247	6.8	5.9 - 7.6
White Women	2,081	12.5	12.0 - 13.1	14%	1,551	9.0	8.5 - 9.4

Sources: Incidence and percent local staging (VA Cancer Registry); mortality (VDH Division of Health Statistics)

<sup>1</sup> Based on combined 2004-2008 data. Incidence rates are age-adjusted to the 2000 U.S. standard population.

<sup>2</sup> Based on combined 2004-2008 data. Percent of Local Stage cancers reported using the Summary Staging System.

<sup>3</sup> Based on combined 2005-2009 data. Mortality rates are age-adjusted to the 2000 U.S. standard population.

V. Cancer Data By Race  
**Prostate Cancer Data By Race**

Race	Incidence <sup>1</sup>			Staging <sup>2</sup>	Mortality <sup>3</sup>			Screening <sup>4</sup>	
	Count	Rate per 100,00	95% CI	Percent Local Stage	Count	Rate per 100,00	95% CI	Prevalence PSA Test	95% CI
African-American Men	6,350	239.2	233.1 - 245.4	76%	1,032	54.4	51.1 - 57.7	60.6%	53.0% - 67.8%
White Men	20,279	144.1	142.0 - 146.1	78%	2,410	21.7	20.8 - 22.5	56.8%	53.9% - 59.6%

Sources: Incidence and percent local staging (VA Cancer Registry); mortality (VDH Division of Health Statistics); screening prevalence (Behavioral Risk Factor Surveillance System)

<sup>1</sup> Based on combined 2004-2008 data. Incidence rates are age-adjusted to the 2000 U.S. standard population.

<sup>2</sup> Based on combined 2004-2008 data. Percent of Local Stage cancers reported using the Summary Staging System.

<sup>3</sup> Based on combined 2005-2009 data. Mortality rates are age-adjusted to the 2000 U.S. standard population.

<sup>4</sup> Behavioral Risk Factor Surveillance System is a national telephone survey of adults 18+. Prostate Cancer Screening = Percentage of men age 40 years and older reporting having a PSA test in past two years. Based on data from 2006 and 2008 (pooled). Percentages are population-weighted.

## VI. Cancer Risk Factor and Screening Data by SES and Insurance Coverage

### VI. Cancer Risk Factor and Screening Data by SES and Insurance Coverage

#### Risk Factor/Screening Behavior Prevalence (95% CI) by Education

	Education	
Risk Factor	High School or Less	At Least Some College/ Technical School
Overweight/Obesity <sup>1</sup>	64.9% (62.6% - 67.2%)	59.5% (57.7% - 61.4%)
Smokeless Tobacco Use <sup>2</sup>	7.3% (5.5% - 9.6%)	2.3% (1.8% - 2.8%)
Smoking <sup>3</sup>	28.6% (26.5% - 30.7%)	12.6% (11.4% - 13.8%)
Sunburn <sup>4</sup>	27.7% (24.5% - 31.2%)	34.0% (31.4% - 36.7%)
Screening Behavior		
Colorectal Screening <sup>5</sup>	58.2% (55.5% - 60.9%)	66.2% (63.8% - 68.4%)
Mammography Screening <sup>6</sup>	72.7% (69.9% - 75.4%)	80.1% (77.8% - 82.2%)
Oral Cancer Screening <sup>7</sup>	29.5% (27.3% - 31.8%)	50.9% (48.7% - 53.2%)
Pap Test <sup>8</sup>	75.9% (70.7% - 80.4%)	88.1% (86.0% - 90.0%)
PSA Test <sup>9</sup>	48.9% (45.1% - 52.8%)	60.0% (56.4% - 63.5%)

VI. Cancer Risk Factor and Screening Data by SES and Insurance Coverage  
**Risk Factor/Screening Behavior Prevalence (95% CI) by Income**

	Income	
Risk Factor	\$50,000/Year or Less	\$50,000+/Year
Overweight/Obesity <sup>1</sup>	62.1% (59.7% - 64.5%)	62.4% (60.4% - 64.3%)
Smokeless Tobacco Use <sup>2</sup>	4.8% (3.9% - 5.8%)	2.8% (2.3% - 3.5%)
Smoking <sup>3</sup>	25.4% (23.7% - 27.2%)	13.2% (11.9% - 14.6%)
Sunburn <sup>4</sup>	24.4% (21.3% - 27.7%)	38.3% (35.3% - 41.4%)
Screening Behavior		
Colorectal Screening <sup>5</sup>	58.2% (55.7% - 60.6%)	67.7% (64.9% - 70.4%)
Mammography Screening <sup>6</sup>	70.6% (68.0% - 73.2%)	82.2% (79.4% - 84.7%)
Oral Cancer Screening <sup>7</sup>	30.6% (28.5% - 32.8%)	52.2% (49.5% - 54.8%)
Pap Test <sup>8</sup>	80.5% (77.1% - 83.6%)	92.0% (89.7% - 93.9%)
PSA Test <sup>9</sup>	52.7% (48.9% - 56.5%)	58.5% (54.6% - 62.3%)

VI. Cancer Risk Factor and Screening Data by SES and Insurance Coverage  
**Risk Factor/Screening Behavior Prevalence (95% CI) by Insurance Coverage**

	Insurance Coverage	
Risk Factor	Yes	No
Overweight/Obesity <sup>1</sup>	62.4% (60.9% - 63.8%)	53.2% (48.2% - 58.2%)
Smokeless Tobacco Use <sup>2</sup>	3.8% (3.1% - 4.6%)	6.5% (2.1% - 3.4%)
Smoking <sup>3</sup>	15.5% (14.5% - 16.5%)	37.6% (33.1% - 42.4%)
Sunburn <sup>4</sup>	32.2% (30.0% - 34.4%)	31.0% (24.9% - 37.8%)
Screening Behavior		
Colorectal Screening <sup>5</sup>	64.7% (62.9% - 66.5%)	39.1% (29.9% - 49.1%)
Mammography Screening <sup>6</sup>	79.3% (77.5% - 81.0%)	51.0% (41.6% - 60.3%)
Oral Cancer Screening <sup>7</sup>	45.4% (43.6% - 47.1%)	15.3% (11.7% - 19.9%)
Pap Test <sup>8</sup>	86.0% (83.7% - 88.0%)	71.1% (62.8% - 78.2%)
PSA Test <sup>9</sup>	58.2% (55.4% - 61.0%)	33.3% (23.7% - 44.4%)

## VI. Cancer Risk Factor and Screening Data by SES and Insurance Coverage

Source: Behavioral Risk Factor Surveillance System

<sup>1</sup> Overweight/Obesity = Percentage of adults who report having a BMI greater than or equal to 25. Based on 2007-2009 data (pooled). Percentages are population-weighted.

<sup>2</sup> Smokeless Tobacco Use = Percentage of adults age 18+ years reporting current use of smokeless tobacco. Based on 2005 and 2009 (pooled) data. Percentages are population-weighted.

<sup>3</sup> Smoking=Percentage of adults who report currently smoking and have smoked at least 100 cigarettes in their lifetime. Based on 2007-2009 data (pooled). Percentages are population-weighted.

<sup>4</sup> Sunburn = Percentage of adults reporting having had a sunburn in the last 12 months. Based on 2007 data. Percentages are population-weighted.

<sup>5</sup> Colorectal Screening = Percentage of adults 50 and older who reported having a sigmoidoscopy/colonoscopy within the past 5 years and/or a home blood stool test within the past year. Based on 2006 and 2008 data (pooled). Percentages are population-weighted.

<sup>6</sup> Mammography Screening = Percentage of women age 40 years and older reporting having a mammogram in past two years. Based on 2006 and 2008 data (pooled). Percentages are population-weighted.

<sup>7</sup> Oral Cancer Screening = Percentage of adults age 40+ years reporting an oral cancer check by a doctor/dentist within the past 12 months. Based on 2006 and 2009 (pooled) data. Percentages are population-weighted.

<sup>8</sup> Pap Test = Percentage of women age 18 years and older reporting having a Pap test in past three years. Women who had a hysterectomy are excluded. Based on 2006 and 2008 data (pooled). Percentages are population-weighted.

<sup>9</sup> PSA Test = Percentage of men age 40 years and older reporting having a PSA test in past two years. Based on data from 2006 and 2008 (pooled). Percentages are population-weighted.

## VII. Cancer Survivorship

Health District	Survivorship <sup>1</sup>	
	Prevalence	95% CI
Alexandria	8.6%	5.2% - 14.1%
Alleghany	9.2%	5.5% - 15.1%
Arlington	6.9%	3.4% - 13.5%
Central Shenandoah	7.3%	4.1% - 12.8%
Central Virginia	12.6%	7.9% - 19.5%
Chesapeake	6.2%	3.4% - 11.1%
Chesterfield	11.9%	7.2% - 19.0%
Chickahominy	8.3%	4.8% - 13.9%
Crater	12.7%	7.9% - 19.7%
Cumberland Plateau	11.0%	6.5% - 17.9%
Eastern Shore	10.7%	6.3% - 17.4%
Fairfax	7.1%	4.1% - 12.1%
Hampton	11.2%	6.5% - 18.7%
Henrico	9.6%	5.8% - 15.7%
Lenowisco	12.7%	6.6% - 23.0%
Lord Fairfax	9.5%	5.5% - 15.8%
Loudoun	6.5%	3.6% - 11.5%
Mount Rogers	9.5%	5.2% - 16.6%
New River	7.6%	4.3% - 12.9%
Norfolk	16.2%	9.7% - 25.7%
Peninsula	7.0%	3.9% - 12.5%
Piedmont	8.5%	5.1% - 13.8%
Pittsylvania/Danville	5.6%	3.0% - 10.0%
Portsmouth	7.5%	3.4% - 15.6%
Prince William	4.9%	2.5% - 9.5%
Rappahannock	9.5%	5.5% - 15.9%
Rappahannock/Rapidan	9.3%	5.3% - 15.7%
Richmond City	13.7%	8.7% - 20.8%
Roanoke	15.8%	10.3% - 23.5%
Southside	9.9%	6.1% - 15.8%
Thomas Jefferson	9.2%	5.5% - 14.8%
Three Rivers	15.8%	10.4% - 23.3%
Virginia Beach	7.1%	4.1% - 11.8%
West Piedmont	15.2%	9.8% - 22.8%
Western Tidewater	9.6%	5.8% - 15.5%
VIRGINIA	9.0%	8.1% - 10.0%



Source: Behavioral Risk Factor Surveillance System

<sup>1</sup> Survivorship = Percentage of adults who report ever having a cancer diagnosis. Based on 2009 data. Percentages are population-weighted.